

Risk Allocation - an equitable or realistic approach for the public sector of Hong Kong? The West Rail Experience.

Almon Chin-hung POON

Solicitor, J.P., LL.B(Hons.) Lond., PgDip(Construction Law, Med. & Arb.), MCI Arb, AHKI Arb, China-appointed Attesting Officer; Arbitrator, Guangzhou Arb. Commission Member of Town Planning Board, and Air Transport Licensing Authority, Past Member of Transport Advisory Committee; Consultant, Wong & Poon, Solicitors

It goes without saying that risk is inherent in construction works. The challenge is how to manage it, and who should bear the risk when it materializes. It is often said that risk allocation should be equitable. Many advantages of it have been spoken of. In fact that was the philosophy followed by Kowloon Canton Railway Corporation ("KCRC") in those construction contracts concerning the West Rail. But why did Mr. K. Y. Yeung, the then Chairman and CEO of KCRC, have to apologize in public? Was that deserved? It is intended in this article to look at firstly how the construction industry respond to deal with risk allocation in general, and secondly, how the public sector of the Hong Kong Special Administrative Region ("HKSAR") should approach the issue of risk allocation in construction contracts (as assisted by risk management), by examining the investigation report on West Rail contracts ("WR Report").¹

RESPONSE TO RISK

It is generally accepted in Risk Management that the methods to respond to risk may be classified as: to avoid, to reduce, to insure, and to transfer or absorb (i.e. risk allocation).

AVOIDANCE/REDUCTION

Risk may usually be avoided or reduced by altering the objective or construction methods of a project. When the time or costs (in broad sense including risk of personal safety or environmental impact) required of such alteration is too substantial, a project might have to be abandoned in an extreme case.

INSURANCE

Under the General Conditions of Contract for Civil Engineering Works ("GCC") used by the HKSAR Government, the contractor will (as not uncommon in international contract forms such as JCT98) be required to insure against those risks as specified (GCC Clause 25). But not all risks are insurable and insurance compensation cannot buy back the loss of lives or time (i.e. the opportunity to accelerating the progress might have been missed e.g. due to rainy season). The Grove Report also argued that it is the society at large which will bear the risk through the insurance mechanism of risk spreading². Seemingly the argument is based on reasons that the shareholders of the insurance companies also form part of the society, and substantial loss of the insurers may

cause increase in premium in general. At any rate, insurance has a much limited scope than it appears to have. Construction administrators still have to look upon other ways to tackle the issue of risk, for example, to transfer or absorb the risk.

DOING NOTHING

By doing nothing or keeping silent in the contract would not help either. One way or the other, somebody will have to bear the loss when the risk materialises. The dispute may be resolved by various modes of dispute resolution on voluntary basis (Alternative Dispute Resolution) or the parties may resort to Court litigation, all of which will result in waste of time and costs. More importantly is the project may be clouded in uncertainty pending the outcome. The more the disputes, the more distrust between the parties and thus the higher chances for delay and substandard quality.

NEED FOR RISK ALLOCATION

As the risk cannot sufficiently be dealt with by the aforesaid means, the Government and other semi-governmental bodies ("the Public Sector") of HKSAR, like other employers, will have to look upon the contract to define what risk should be transferred to the contractor or be accepted by the employer, i.e. the risk allocation mechanism.

THE GOVERNMENT'S DESIRE TO FIX COSTS AT THE OUTSET

Philip Nunn (1999), the draftsman of the 1985 GCC for the Government, recalled the Government had, at that time, been facing numerous difficult construction arbitrations:

*"The inadequate nature of the conditions of contract" in those days had caused difficulties to the Government rendering "substantial overruns in time and budget... The policy behind the 1985 Conditions was therefore to provide Conditions of Contract which were firstly clear and unambiguous and secondly allocated risks in such a way that the Government was able to fix as far as possible the cost at the outset. It was thought that to impose most of the risks on the contractor would lead to the final contract sum being largely predictable... It was also hoped that the additional clarity of the conditions ... would lead to fewer contract disputes."*³

A widely criticized example of conditions drafted under this policy, as we all know, would be GCC Clause 13. Under this clause, the contractor is deemed, inter alia, to have examined and satisfied himself of the nature of the ground/sub-soil, and materials to be excavated (Clause 13 (1)). He is also deemed to have obtained his information on all matters affecting his tender and the execution of the works. He cannot claim for additional payment even if "*incorrect or insufficient information was given to him*" by the employer (Clause 13(2)). The fact that he "*could not foresee any matter*" affecting the execution of the works would be no excuse.

THE SCANDAL

On the face of it, GCC Clause 13 appears to be impeccable under the laissez-faire principle. The Government will treat all tenderers equally. The tenderers knowingly and willingly accept the risk in return for the expected profit. But what if, for instance, the contractor has mis-calculated the risk? What if the contractor turns a blind eye to the risk and treat the contract as a gamble (such as when he is too hungry for works at the time)? The risk will go back to the employer if the contractor becomes insolvent. It is the public at large who will pay or suffer eventually.

In the recent years, things have failed to work in the way as intended by the Government. To name a few, the original main contractor for the SSDS (Strategic Sewage Disposal Scheme Stage I) in 1996 abandoned the works scheduled to complete in mid 1997.⁴ Thereafter, the works could not get restarted until after the original completion date in late 1997 to complete in late 1998. Since about 1999, **serious substandard piling works** have been discovered in various housing estates developed by the Housing Authority: Tin Chung Court in Tin Shui Wai, Yuen Long;⁵ and Yuen Chau Kok Shatin Area 14B Phase 2.⁶ In early 2000, rejected substandard reinforcement was uncovered in the Home Ownership Scheme in Tung Chung, (Housing Department June 2000).⁷

As a result of the scandal to housing construction, Dr. Rosanna Wong regrettably had to resign, from the chairmanship of the Housing Authority. The Chief Executive of HKSAR also commissioned the

Construction Industry Review Committee then headed by Mr. Henry Tang to review the current state of the industry and to recommend improvement measures (“the Tang Report”).⁸

The lesson to learn (amongst others) is that the public sector cannot totally rely on GCC Clause 13 type of risk allocation blindly regardless of the nature or scale of the risk the contractor is going to face.

CALL FOR ACCEPTANCE OF RISK

People apparently tend to attribute the above problems to the “onerous or unfair allocation of risks in construction contracts which places the risks of unforeseen ground conditions and third parties’ lawful interference (usually regarding underground utilities) to contractors”.⁹ (The said risk and those concerning GCC Clause 13 shall for easy discussion be referred to as “the Risk”.)

Nunn (1999) when talking about the substantial delays experienced by the Drainage Services Department in the SSDS project concluded his experience:

*“The attitude that imposing the risk on the contractor leads to price certainty and cost saving is incorrect. One thing for sure, this would not have happened had the risk of ground conditions been on the Government rather than the contractor”.*¹⁰

The Grove Report also opined that the GCC Clause 13 type of risk allocation was right against international practice and strongly recommended the Government to accept the Risk.¹¹

TANG’S RESERVATION

However, it is particularly noted that the Tang Report had not gone that far straight away. Unlike most of its other recommendations, it consciously did not give any conclusive or solid recommendation on this issue. Firstly, it gave a thorough and accurate observation of the problems facing the Government (as well as contractors and private clients):

“...when work is scarce, contractors tend not to price the risks and seek instead to submit claims, if the risks materialize, to mitigate the loss... Onerous allocation of risks to the contractors in a climate of severe competitive tendering that drives prices down can lead to substandard workmanship and other malpractice to cut corners. This could result in

costly and wasteful rectification or higher running costs to the user possibly requiring earlier replacement of the defective parts of the works... (It) can also give rise to claims and disputes which are non-productive and could be costly to both parties. In spite of allocation of risks through the contract, any significant default by the contractor remains the client’s risk” (paras. 5.53-5.55).

It then discussed the advantages of contracts based on “an equitable allocation of risks” (para.5.55). Regarding the Grove Report, it only set out Grove’s recommendations on accepting the Risk and the Government’s reasons for rejecting same. Its conclusion is only to recommend “the Government should seriously reconsider (Grove’s) recommendations in light of the principles of risk allocation. ...with the objective of achieving a more equitable allocation of risks between the parties...” (para.5.59).

Probably the esteemed members of the Tang Report had also rightly observed that **by just accepting the Risk by the Government still cannot solve all the above problems.**

THE WEST RAIL INCIDENT

The West Rail incident may well illustrate the situation - **when too much emphasis on equitable allocation of risk might NOT work.** The WR Report published on 16 May 2002, was a review undertaken by Messrs Ernst and Young upon instructions of the KCRC following the wide-spread criticisms mainly on the additional payment of HK\$100 million to Siemens, the contractor for the Telecommunications System for West Rail. Attention was also drawn to the additional payments amounting to about HK\$1.6 billion in 27 other supplemental agreements. The consultants were requested to review 3 selected contracts for, namely, the Telecommunications System; civil works for Tuen Mun Station; and civil works for Mei Foo Station together with their respective supplemental agreements, with the view to determine, inter alia:

- whether “KCRC’s procedures and practices” in the tender, negotiation and conclusion of contracts had been followed (para.1.2.4); and
- whether KCRC had followed “normal and appropriate procedures” in monitoring the performance of the 3 contracts, and in negotiating the supplemental agreements (para.1.2.5).

CAVET

It is interesting to note that the consultants were NOT instructed to advise whether the supplemental agreements and additional payments were justified in the circumstance. Nonetheless, the WR Report went a step further to conclude that the supplemental agreements were rightly made as a commercial settlement which appears to have been in the best interests of KCRC (paras.2.6.9, 2.7.15, 2.8.7).

Hence, the situation is somewhat peculiar. The terms of reference, for unknown reason, **only requested for a finding based on procedures**, i.e. whether proper procedures and practices had been followed. In reply, the consultants came back with a judgment on substance, i.e. **whether the supplemental agreements were in the best interest of KCRC**. Readers might have to bear this in mind when they go through the WR Report.

KCRC'S CONTRACT PHILOSOPHY

Without doubt, KCRC had been upholding the philosophy of *"a fair and equitable"* allocation of risk between itself and the contractors (para.4.3.6). It accepted the risk of unforeseen ground conditions on civil engineering contracts (para.4.3.9). A contractor would be entitled to additional compensation for unforeseen ground conditions (para.4.3.10). KCRC would look for early and proactive resolution of disputes with contractors (para.4.3.16). It also adopted the approach *"to work in partnership with its contractors as far as possible on the basis of mutual co-operation"* (paras.4.3.8, 4.3.22).

As the consultants found, the contract strategy of KCRC was consistent with the international practice in risk allocation (para.4.3.9), and the recommendations of the Tang Report in various aspects including dispute resolution and partnering (para.4.3.21). The Government Procurement Agreement ("GPA") of the World Trade Organization ("WTO") concerning transparent procedures and level playing field for foreign tenderers (the rule of "national treatment" applicable to all contracts with estimate value exceeding HK\$50 million) was also observed (paras.4.4.4, 4.4.5).

SUPPLEMENTAL AGREEMENTS

In order to avoid prolonged and costly disputes on the quantity of EOT (extension of time) and additional sums to be claimed by the contractors, KCRC had to agree with them on the quantum by supplemental agreements. This may also achieve a very important task - to ensure the contractors would be bound by a re-structured set of completion dates (in order to bring the progress back on schedule)(para.2.3.9) and avoid the knock-on effect on other contracts.

As this one stone of supplemental agreements (which could appear under different labels or forms) may kill 3 big birds, it is also favoured by various reports in the industry, as well as experienced practitioners abroad such as the United Kingdom, United States and Australia (para.2.3.10).

RIGHT IN SUBSTANCE WRONG IN PROCEDURE

After all, the senior management has also succeeded in reducing the budget costs (paras.1.1.4, 1.1.5). The only substantial query against the senior management from the WR Report is the failure to report to the Management Board timely. At the same time, it was recognized that the Management Board would NOT have disagreed with the proposed action even if they were reported of the problems timely (paras.12.10.12-13, 20.8.13-15, 28.3.9).

If the consultants' findings are correct, the senior management had already arrived at the right decisions in substance. The late reporting was only related to internal administrative procedure, which should not have attracted such substantial criticisms. Mr K Y Yeung's apology seemingly had not been met with any sympathies in the Legislative Council as well as and the press. So is there any problem with the contract strategy of *"equitable allocation of risk"*? Is it really for the best interest of KCRC? Is there anything missing out from the WR Report?

CONTRACT FOR TUEN MUN STATION

In this contract, the piling works should be built on the Tuen Mun nullah during the 6-month dry season of the year. As the rocks were significantly harder than expected in the contract, the piling works could not be finished within the dry season (paras.20.2.4-6).

As a result, the concrete slab could not be poured upon the piles. Without the slab acting as the shelter, other works could not continue above the nullah (i.e. under the cover of the slab) during the subsequent wet season (para.20.2.7). The delay, without fault on the contractor, would have a knock-on effect on other contracts thus attracting claims for additional delay-related compensation from other contractors (para.20.8.6).

Good Bargain

KCRC therefore rightly reached supplemental agreement with the contractor on a delay recovery programme in order to accelerate the progress and get the whole contract back on schedule (para.20.8.7). The contractor claimed HK\$721 million which KCRC estimated at HK\$484 million. And the finally agreed amount was well below the two at HK\$430 million (paras.20.6.5). Hence, KCRC must have done an excellent job in the negotiations.

Queries

Nonetheless, one may query whether the remedial actions could have been avoided at the outset by better site investigation. The weather restriction and the serious knock-on effect in case of delay on the whole project should be obvious even at the time of the contract.

As the WR Report pointed out, a more extensive site investigation in the pre-contract stage *“would have been money well spent”* (para.20.8.9). The problem (or error, if someone would like to call it) probably lies in the unqualified belief that the equitable allocation of risk will work. **If we are willing to accept and pay for the risk, what else could be the problem?** But there are situations where money does not count, for instance, technically too late to accelerate the progress e.g. bad weather or political constraints.

Possible Justification

To be fair, one may still argue the above supplemental agreement is already within the calculation of the administrators, based on a balance of the risk anticipated, time constraints in pre-contract stage and the availability of remedial measures etc. It is unfortunate that the WR Report had NOT disclosed the sort of factors considered by the administrators in this regard.

CONTRACT FOR MEI FOO STATION

The underground conditions in Mei Foo Station were highly unpredictable as the area was reclaimed at various stages (para.28.6.2). Delays of the piling works were again caused by *“unexpected”* obstructions and underground conditions. Moreover, the fact that Mei Foo Station is located in close proximity to Ching Cheung Road, Lai Chi Kok Bridge, Lai Chi Kok Swimming Pool and partially above existing MTR running tunnels attracted stringent requirements imposed by various governmental bodies concerned. Various approvals were therefore required from each of the stakeholders, which took much longer time than expected. (Presumably, the requirements from different stakeholders might sometimes be conflicting with each other, if they just looked at their own needs without taking an overall view of the needs of the others).

Like the case in Tuen Mun Station, KCRC succeeded in bringing the progress back to schedule by well-bargained supplemental agreement with the contractor for an acceleration scheme (paras.28.4.3, 28.6.4-6).

Queries

In this case, the complicated underground conditions and constraints from the surroundings at or above grade can hardly be described as *“unexpected”* as the consultants did in para.28.6.3. The queries for the Tuen Mun Station above should equally apply to this case and would not be repeated here. Furthermore, one would be left in doubt on **whether KCRC had taken a proactive role in**, for example, reminding the tenderers of the situation, or **soliciting for views or assistance from the various stakeholders as early as practicable.**

CONTRACT WITH SIEMENS FOR TELECOMMUNICATION SYSTEMS

Unlike the other 2 contracts above, the Siemens contract is not concerned with any ground conditions. It is related to risk allocation in the broad sense that the overall risk of the works were allocated to Siemens who appears to have knowingly and substantially under-priced the risk. Their bid approximately was HK\$287 million as compared with the second lowest bid of about HK\$458 million offered by Singapore Technologist (sic) Ltd. The KCRC pre-tender estimate was HK\$848 million

(paras.5.18, 7.5.3). So the Siemens' bid price was as low as at about 63% of the 2nd lowest bid and 34% of the KCRC estimate.

The fixed price, lump sum type contract was awarded to Siemens in November 1999, for the one-line completion of the Telecommunication System for West Rail from design, supply, installation to testing and commissioning (paras.5.1, 5.2, 5.18). The contract period is about 47 months. It comprises 7 major Systems: Radio, Telephone, Fibre Optic Transmission backbone, Public Address System (PAS), Passenger Information Display System (PIDS), Closed Circuit Television (CCTV) and Metropolitan Area Network System. A software ("the Software") has to be developed to integrate the operation of these systems with particular to PAS, PIDS and CCTV.

Throughout the 12 months in 2000, there was little progress with the Software development. Not until January 2001 was the work subcontracted to an English subcontractor Optical Network Limited ("ONL") upon hard pressure of KCRC.

About 11 months later by mid-November 2001, the works were still seriously behind schedule: 10 weeks for overall progress, 13 weeks for the Software and 4 weeks for the radio subsystem. They are indispensable for the opening of the West Rail, because of their "critical link with system safety associated with either the stations or the running of trains" (para.5.29).

Short of any practical option, KCRC had to enter into supplemental agreement ("the Supplement Agreement") with Siemens on 19 November 2001. The basic terms were as follows:

- additional payment of HK\$100 million to Siemens;
- re-organisation of Siemens' management structure for the project;
- replace ONL by 3 individual subcontractors for PIDS, PAS and CCTV system; and
- KCRC to waive all potential claims against Siemens for losses or delays caused or which arose before 27 November 2001 (para.5.31).

The matter came to light in the press in January 2002 and aroused much criticisms.

DELAY-RESCHEDULE-DELAY

In reading through the WR Report, it should be noted that Siemens' view were not sought nor included in it. Certain parts of the original Report such as those touching on non-performance had been deleted on legal advice, because they related to the contractual relationship between Siemens and a subcontractor to which KCRC was not privy (para.6.10.3).

The Report shows that regardless of the repeated and repeated demands notices and pressure from KCRC to Siemens, the responses were totally unsatisfactory within the first 24 months of the contract.

The following extracts from the WR Report may help to glimpse what had happened, though the picture may be far from complete:

- "Full works programme not satisfactory" and "lack of resources" were highlighted on various Weekly Progress Review Charts since mid-February 2000. (para.6.3.4).
- In a letter from the Engineer to Siemens dated 2 May 2000, it stated:

"As of 2 May 2000, 22 resubmissions and 7 submissions are overdue by 46 days in some cases... This may be an indication of the inadequacy of your level of resources." (para.6.6.14).
- In a Summary of a Three-month Progress to 30 September 2000:

"KCRG continued to remind Siemens of the appointment of the subcontractors".
- In a letter dated 7 August 2000 from the Engineer to Siemens:

"...personnel responsible for software development have not yet been identified. Appointment of the subcontractors for PAS/PIDS, Radio and CCTV are still outstanding" (para.6.7.15).
- In the minutes of the Monthly Progress Meeting on 14 February 2001:

"...some key personnel (of Siemens) took up excessive duty which could not be properly performed."

- In the minutes of a similar Meeting on 16 May 2001:

*“The Engineer’s Team expressed their concerns and disappointment on the **delay on progress despite the programme had been rescheduled with the revised (FWP)**” (para.6.10.12).*

- In the minutes of a Quarterly Review Meeting dated 12 June 2001:

*“KCRC stated that Siemens were again in **delay (3 weeks) despite the fact that the revised FWP had just been baselined**” (para.6.10.13).*

- In the adverse Programme Assessment Report on Siemens dated 27 June 2001:

*“Although the subcontract with ONL... was signed in January 2001, progress of... software development was in delay and was highly unsatisfactory. **The MMI was re-baselined in April 2001. However, ...delays were reported immediately after this exercise.** (para.6.10.16). **The Contractor has been very claim oriented. A total of six claims were submitted during the last reporting period.**” (para.6.12.24).*

NO MONEY NO CONTROL

By November 2001, KCRC seemed to have **totally lost control on Siemens’** non-responsive behaviour. They just did not have any other practical tool to manage the progress - except by paying them. In an attempt to justify the proposed supplemental agreement, the Director of West Rail told the Corporate Tender Board in his confidential memorandum dated 14 November 2001:

*“The Corporation, through the auspices of the Engineer, has unsuccessfully attempted to enforce the provisions of the contract in resolving the manifest problems. This arises from a sense that the contractor has made a mistake in underbidding the job. ...**the Corporation’s interest will not be served by a strict reliance upon contractual and legal principles.** ... The best way of achieving the successful delivery of the project is to resolve the problems besetting the project through a collaborative commercial agreement **with both parties working in partnership.**” (para.7.3.3).*

The problem is that Siemens did not appear to be collaborative at all. Neither could they be described

as working in partnership at this critical juncture. Even the conventional partnering concept of “strategic partnering” failed to work. Thus in a Rate of Progress letter dated 20 August 2001, the Director of West Rail wrote to Wilhelm Gattinger, President and Chief Executive Officer of Siemens, to remind them of their long term partnering relationship in unusually strong terms:

“Siemens have been awarded a number of contracts related to West Rail, East Rail Extension and Light Rail works. Continuation of this strong relationship is very much dependant on Siemens ability to deliver a quality product on time and in accordance with your contract obligations. Over the coming weeks, I will be obtaining regular reports from the General Manager Railway System and I am expecting significant improvement by the September 2001 QRM.”

Siemens immediately responded by serving **6 claims** in the last reporting period before November 2001 (para.6.12.24). In fact, the Supplemental Agreement did not provide for the reciprocal release of Siemens’ future claims against KCRC (except the then existing 6 claims). Whether Siemens would lodge any further claims remains to be seen. Of course, this has now become more unlikely as the matter is now politicized and the public has been watching closely.

WHEN REALITY OUTWEIGHS PRINCIPLE

The lesson to learn from the Siemens incident is that there could be a situation when all traditional risk management tools suddenly stop to function, and when equitable risk allocation falls a matter of mere academic debate. The accommodating attitude of the parties is as important as the contents of the contract in meeting the targets. KCRC’s mandate is to open the West Rail in September 2003. The consequence of the failure of the Siemens contract (technically, financially and politically) is so substantial that it outweighs all principles of project management, fairness or equitableness. **The opportunity cost for KCRC was simply too high.** KCRC was left with no practical alternative but “to provide Siemens with an incentive to perform” (para.7.5.2). The grievances of a member of the Managing Board, Miss Denise Yue, the Secretary for Treasury of HKSAR were recorded in the minutes on 17 December 2001:

“...she was worried that the Corporation, as an employer, was compensating its contractor for poor performance. It was not the case of Management being unaware of the position when an extremely low-priced tender was submitted by Siemens. Management was comfortable with accepting the tender in the belief that it was a commercial decision of Siemens with the aim of doing business with the Corporation. ... The sequence of events had left with the Corporation with no alternative but to be held hostage by Siemens because the Corporation wanted the telecommunication systems to be operational by that time. Siemens had got the Corporation in a tight corner.” (para.7.5.4).

WE GOT YOU

If Miss Yue is right, KCRC should NOT have accepted the extremely low-priced tender. The Management were too confident in the belief that Siemens would treasure the long-term partnering relationship. They believed Siemens would keep their promise and behave themselves. After all, they still have to look upon KCRC for more contracts in future. However, As the Siemens contract was so critical to the whole project. It is not clear whether the Management had put a question to themselves before deciding to accept the Siemens' tender like: *“What if the anticipated partner is driven by hunger and try to trap us in a tight corner?”* Mr KY Yeung, replied to Miss Yue in the same meeting that *“he accepted the responsibility for misjudgment in the tender process... He said that he owed the Board an apology for the error of judgment.”* (para.7.5.4). But is the answer as simple as just not to accept Siemens' lowest bid? Would it be easy at all to justify the acceptance of a much higher bid to the public? Is there any guarantee that a higher tenderer would not act as Siemens did or even worse?

LIMITATIONS OF A PUBLIC SECTOR EMPLOYER

Should the Siemens incident happen to a private employer, there is certainly nothing for Mr Yeung to regret. Rather he should be applauded for the success in maximizing the company's interest by taking the lowest bid from a contractor who is capable to bear the loss in the first place. Even with the additional payment of HK\$100 million, KCRC is still better-off by some HK\$67 million in comparison with the 2nd lowest tender (para.7.5.4). The

supplemental agreement is still good value for money. KCRC reiterated in May/June 2003 that they would be able to fully operate the train by September/October 2003 as scheduled. The long-term relationship is preserved. The matter is a typical case for the partnering concept of strategic partnering and value engineering (irrespective of the queries above) i.e. Siemens tried hard to offer the extremely lower bid price and the employer tried hard to help it out when it suffered severe loss. To be fair, Siemens has already made its efforts by continuing the works at a substantial loss (even after the Supplemental Agreement), although it lacks the momentum to positively catch up with the schedule (in order to minimize its loss). Siemens' open book costs are expected at HK\$560 million while the revised contract sum is about HK\$387 million (inclusive of the additional HK\$100 million. (paras.7.5.2, 7.5.3)

A ROCK AND A HARD PLACE

As a hindsight, Mr Yeung might have unconsciously been stuck between a rock and a hard place at the outset - a situation seldom experienced by the Hong Kong public sector before. Under Section 12 of the KCRC Ordinance, KCRC is obliged to conduct its business *“according to prudent commercial principles.”* The WR Report rightly opines that under these principles, KCRC has to consider the consequences for the project as a whole including, for instance, the likely financial impact on other West Rail contracts, the significant time and costs incurred to replace Siemens by another contractor, and the financial impact of the additional payment on the overall budget is relatively very small (paras.12.10.4-7).

By looking at KCRC's statutory duty to run according to prudent commercial principle in isolation, there is nothing wrong in both the decisions to accept the tender and to enter into the Supplemental Agreement. A commercial decision only looks upon the opportunity to maximize the profit and minimizing the costs, and nothing more. The decisions are arguably also prudent enough, because Siemens has, after all, agreed to finish the contract at a loss (probably with its eyes on the long-term working relationship).

PUBLIC ACCOUNTABILITY V PRUDENT COMMERCIAL PRINCIPLES

But Mr Yeung's hands are at the same time tied by other conflicting factors. As a public organization, KCRC has to account to the public. It would be very difficult to satisfy the public that KCRC should pay the additional payment. The public in this case tended to uphold principles and procedures rather than the actual outcome (though the public's taste is not always predictable). In the present political environment of Hong Kong after the handover, there is little room for heroes. The public are particularly suspicious (sometimes to a hysterical stage) of whether there is any underhanded conduct. Had Mr Yeung decided NOT to accept Siemens' tender as an extremely low-priced bid, who knows he will not face even stronger accusations. This dilemma is also shared by foreign experiences. Botsford (1997) observed that *"there can be suspicion of cosy deals where a contract is not awarded on lowest cost"*.¹² One could imagine how difficult it would be to justify for not accepting the lowest bid. The whole matter is a case when **prudent commercial principles clash with public accountability**. By being the Chairman and CEO, Mr Yeung's dual capacity also made it impossible for him to report to an independent office apart from the Managing Board.

The other dilemma of the public sector employer regarding risk allocation is, as the Grove Report observed: the Government has *"to protect and manage the public fisc militates against open-ended payment schemes except in the most unusual of circumstances"* (para.4.3).

Therefore in rejecting the Grove Report's recommendation to accept the risk for unforeseen ground conditions and third party's lawful interference, the Government *"expects that by procedural means it could reduce the exposure to the risk substantially"* (Tang's Report para.5.56). Regarding the third party's interference, the Government even rejects the usual practice to award EOT to the justified contractor. The Government is in fear that the contractor would have no incentive to mitigate delays (Tang's Report para.5.56).

SOME SUGGESTIONS

By the informal gathering of views from stakeholders known to the writer, it is unfortunately observed

that the public sector administrators recently may tend to avoid settlement, as a result of the Siemens incident. This is understandable as it is always easy to stay aggressive and adversarial, leaving the public at large to bear the final responsibility. An administrator may rest his mind in peace by telling himself, "If that is what the public want, why should I stand in their way?" The question is that the public might NOT be well informed at all. It is unrealistic to expect the public at large would be able to comprehend the complicated risk management and partnering concepts. Perhaps it may help if the public are educated in the long run. But whether the public would have the interest to go into details at all is quite another matter.

In the present circumstances, the probable way out may be not just rely on traditional management principles of risk allocation. The public's taste is not always predictable. Whether the allocation of risk is fair or equitable is a subjective matter. Even the Grove Report also recognizes that *"all of us will never agree on what is a fair and reasonable balance between the contractor and the employer"* (para.9.1). Like it or not, the reality is that financial considerations may sometimes rise above principles (Siemens and KCRC alike).

There is no point in passing a risk, through contract conditions (i.e. including in the broad sense, the overall risk of a contract in an under-priced tender as in the Siemens case) who is ill-equipped (or simply not prepared) to bear that risk when it materializes. The cases both in Tuen Mun and Mei Foo Stations showed the pre-contract site investigation could seriously affect the time and costs of a project, regardless of who takes the risk. Smith (1996) observed that those sensible employers who made *"enlightened risk allocation and contracting procedures part of their standard procedures and documents"* found that they had had fewer delays and disputes.¹³

The Mei Foo Station case also showed how both parties may benefit if the employer takes a proactive role in soliciting and monitoring views and cooperation of various governmental bodies throughout the project.

It is submitted that the public sector employers should take a comprehensive view of and a proactive role in the risk allocation throughout the project

procurement process from pre-contract stage to the completion. **They do NOT have to totally rule out GCC Clause 13 type of risk allocation.** But in parallel with the traditional tools for considerations in allocation and management of risk allocation, they should also take into account all reality considerations. The contents of such a checklist of reality considerations may be the subject of detailed surveys, and may vary from case to case. To start the ball rolling, one may come up with some simple suggestions based on the above discussions:

- Is the attitude of the tenderer's management tend to be litigious or accommodative?
- Sufficient incentive for cooperation?
- What if they try to catch us in a tight corner?
- May the risk be better controlled by better pre-contract investigation?
- How could the employer act proactively to contain the risk before and in the progress of works?
- Should the tenderers be warned of a particular risk?
- The opportunity costs to pay upon failure of the contractor?
- Any limitation in replacing the contractor, legally technically and financially?
- Any political sensitivity?

The traditional risk allocation and management tools may be applied as a starting point. The preliminary decision of risk allocation should then be tested and adjusted against all relevant reality factors in reality at the pre-tender stage. The process should be repeated at the tender selection stage and from time to time throughout the project progress. Whenever the traditional tools for proposed allocation and management of risk cannot satisfactorily deal with any item in the checklist, the proper level of management should be called upon to take an overall view of the matter and strike the balance somewhere.

In order to maintain the confidence and trust of the public, emphasis should also be given on the independence of the management office to receive the report and make corresponding decisions. All factors taken into account for arriving at a certain

decision should also be put on record. More importantly, such decision-making mechanism (rather than the contents, which should normally be confidential and commercially sensitive) should be made known to the public.

CONCLUSION

Rather than emphasizing on whether the allocation of risk is equitable, the public sector employers should take a realistic approach both in risk allocation and management. Risk allocation has to be supplemented by proactive risk management beginning from pre-contract stage. They would have to bear in mind the political implications as well as their statutory obligations. Risk allocation is the means, whilst the project objective is the end. For the purpose of risk allocation, risk has to include the broad sense of the overall risk of a contract in an extremely lower bid price. No matter on which party the risk lies, risk allocation should NOT depart from the prime objective of completing the quality project within the designed time and costs. What ought to be done to achieve the ultimate objective must be done, wherever the risk lies.

The **public accountability** requires a check and balance mechanism in the decision-making process, which is both transparent (in procedure rather than in contents) and independent.

As to the sort of Siemens incident, Hong Kong's best interest might may NOT be served by simply rejecting the lowest tender, nor to resort to legal rights strictly on the question of delay. Depending on more information to be discovered, it is open for argument that the whole incident is a cleverly calculated risk-taking decision by KCRC based on prudent commercial principle. It is suggested that a further study on this issue be undertaken, not necessarily for the fame of Mr Yeung, but for the overall efficacy (costs and time) of our construction industry and for the best interest of Hong Kong.

NOTES

- 1 Ernst & Young as consultants commissioned by KCRC (April 2002). KCRC Review of Payments to Contractors for the West Rail Project.
- 2 Grove, Jesse B (September 1998), Consultant's Report on Review of General Conditions of Contract for Construction Works for the Government of HKSAR at para.4.2.
- 3 Nunn, Philip (13 December 1999) Risk Allocation in Government Contracts and in particular the Risk of Ground Conditions, The Lighthouse Club seminar at para.2.
- 4 Drainage Services Department (December 1999) in information provided to Legco Panel on Environmental Affairs.
- 5 Housing Department (27 September 1999) Information Paper for the Legislative Council Panel on Housing Excessive uneven foundation settlement observed in Tin Shui Wai Area 31 Phase I.
- 6 Hong Kong Housing Authority (May 2000) The Report of the Investigation Panel on Accountability (Piling contract 166/1997 Shatin Area 14B Phase 2).
- 7 Housing Department (June 2000) Information Paper for Legco Panel on Housing Suspected Use of Rejected Substandard Reinforcement in the Home Ownership Scheme Development at Tung Chung Area 30 Phase 3.
- 8 Henry Tang et al. (January 2001) Construct for Excellence Report of the Construction Industry Review Committee.
- 9 CY Fung (March 2002) Risk Allocation of Unforeseen Ground Conditions and Underground Utilities in Construction Contracts - Time for a Re-think; The Hong Kong Surveyor, The HK Institute of Surveyors, see also The Tang Report para.5.53-5.56.
- 10 See n.3 above.
- 11 See n.2 above at paras.12.4 &15.4.
- 12 Botsford, Charles (1997) Partnering in the Public Sector Report of evening workshop held at Edgbaston Cricket Ground on 22 July 1997. CIRIA and Construction Productivity Network.
- 13 Smith J Robert (October 1996) The International Construction Law Review vol.13 part 4.

A Study of the Relationship between Contract Period and Tender Sum of Building Projects in South-western Nigeria

G O Jagboro

ANIQS, BSc (Qty. Surv.), MSc. (Constr. Mgt.), RQS
Associate Professor, Department of Quantity Surveying
Obafemi Awolowo University, Ile-Ife, Nigeria

G K Ojo

BSc (Qty. Surv.), MSc (Quantity Surv.)
Lecturer, Department of Quantity Surveying Obafemi
Awolowo University, Ile-Ife, Nigeria

ABSTRACT

Construction activity is a highly risky business with uncertainties that may task management's effort. A variety of external and internal factors influencing the construction process including two variables of cost and time have been identified in literature to be relevant to the success of most construction projects. The objective of this study was to test Bromilow's model for determining the relationship between the contract period and the tender sum of building projects in the Nigerian construction industry. Detailed cost information of 82 completed projects executed between 1990 and 2000 were used for the regression analysis. The tender sums used for analysis were adjusted to 1998 price index to ensure homogeneity. The result of the analyses showed that the contract period was linearly correlated with the tender sum in logarithm format by $\log CP = 3.240 + 0.111 \log TS$ which on transposition could be written as $CP = 33 (TS)^{0.111}$

KEYWORDS

Construction, Tendering, Contract period, Tender sum.

INTRODUCTION

Construction is a sector of the nation's economy responsible for physical development and transformation of physical environment and contributes positively towards the creation and generation of additional facilities to the existing stock of wealth. However, construction activities are very risky by their nature and scope with uncertainties that management has to deal with in order to ensure project delivery. A variety of external and internal factors influencing construction process are the main reasons for this situation. Time, cost, quality and participation satisfactions are the main criteria for measuring overall success of construction project. However of these variables, time and cost tend to be the most important in the project delivery equation because of their economic implications, if they are unnecessarily exceeded. Additionally, emerging technological trends in construction industry practice in Nigeria has created a situation in which trust between client and contractor is

essential and that the success of the project will increasingly be measured against the requirement on completion (Izam and Kolawole, 1998). Early completion of a project is of great importance to both the client and the contractor because any delay may result in additional cost, which may frustrate the contract execution.

The benefit of early completion is that the client's objective of value for his money invested may be achieved as soon as possible. On the other hand, the contractor's projected cash flow for work can be maintained within the date stipulated in the contract document. This will in no doubt ensure the smooth running of his organization, make profits in order to sustain and; at the same time create goodwill and reputation for subsequent projects. Chan and Kumaraswamy (1997) opined that completing projects on time is an indicator of an efficient construction industry. A project is considered successful if it is completed on time, within budget and to the specified quality standards specified by the client at the outset of the project (Chan and Kumaraswamy, 1994). Chan (1996) highlighted determinants of project success in the Construction Industry of Hong Kong. Moreover, Rwelamila and Hall (1995) were of the view that, the time completion of a project is frequently seen as a major criterion of project success. An appreciation of contract duration and its effect on tender sum or vice versa are an essential requirement at all levels of management within the construction industry. It is only by predetermining the actual completion time, maintaining that time and ensuring that the project is delivered at the end of the stipulated time that the problem of abandoned projects can be resolved; and the tender sum can then be maintained with little difference between it and the final sum at the end of the project. The determination of project cost and contract period has become too repetitive job tendered for by contractors. Thus, there is need to examine this aspect of the tendering process. This study was aimed at empirically establishing the relationship between these two important determinants of project success in Nigeria based on the Bromilow's model for determining the relationship between the contract periods from the value of the tender sums. This study was limited to building works executed by construction firms and contracting organization in South-western Nigeria.

LITERATURE REVIEW

DETERMINATION OF TENDER SUM

Abandoned building projects are common in various towns and cities with its destructive effect to the economic growth of the nation. Ajanlekoko (1987) noted that the performance of the Nigerian Industry time wise is poor. It is now very difficult to find a project on which the initial contract sum is not exceeded before the completion of the project. Oma-Williams (1991) showed that cost overrun of construction projects in Nigeria is put at a conservative value of 140% of project cost. The main reason for this is that most projects are not completed within the agreed period due to unrealistic tender sums and contract durations quoted by the contractors, inflation and the transfer of the project to other contractors invariably lead to escalation of project costs.

Mansfield et al. (1994) identified inaccurate estimating as one of the major causes of cost overrun. As a result, serious action must be taken by construction project estimators in order to minimize this occurrence. Construction tender is essentially an offer made by a contractor with a view to its acceptance by a prospective building owner. In specific terms, tender could be seen as an offer by one party to provide goods and services or undertake works for another party in return for a specified sum of money. This may however include other conditions, which are required by tenderers to carry out and complete the specified building works. The code of estimating practice refers to the term "tender" as the sum of money, time and other conditions required by the tenderers to carry out and complete the specified building works. It could be deduced that the tender price is the total cost of the works, inclusive of work items, plus a lump sum or percentage addition to unit rates to cover overhead charges and profit.

DETERMINATION OF CONTRACT PERIOD

Chan and Kumaraswamy (1995) noted that construction time often serves as a benchmark for assessing the performance of a project and the efficiency of the project organization. Contract period is time required of a contract work from the start to completion. This is the time available for executing project and is normally agreed upon at the time of

signing a contract. To some, it may be from the award of contract to the commissioning of that project or from the day the site is handed over to the contractor to the day the site (completed work) is handed back to the client depending on how the case may be. There is need to establish that the duration of the project must be estimated as exactly as possible, as must the necessary capacity in terms of manpower and other resources because changes in time schedule will affect other elements of the project, so the appropriate technique must be employed in determination of contract period.

Planning always precedes the determination of contract period; the whole project from preliminary stage to construction stage is first divided into activities. Thus the completion time should be established by the use of method statements and other such planning techniques, like bar charts and critical path analysis, to determine the optimum time required for the project. A construction activity is a portion of a project, which may be performed by a classification of labourers or perhaps a single type of equipment. In order to estimate the progress in project construction, the job planner should determine the quantity of work to be constructed for each activity expressed in an appropriate unit. Then, he should estimate the probable rate at which the work will be performed, allowing for estimated loss in time owing to bad weather or any cause. From this information, it will be possible to estimate the total time required to complete each activity. The desirable sequential relationships between activities should be considered in scheduling the activities. The basic techniques in determination of construction time include work measurement, bar charts and network analysis.

LINKAGE OF CONTRACT PERIOD TO TENDER SUM

The first significant recorded assignment of construction performance of building project was initiated in Australia in the late 1960s in which the Commonwealth Scientific and Industrial Research Organization undertook a pilot study on the performance of building contract in 1967. A fuller investigation, using a larger number of projects was subsequently performed. Bromilow (1969) published the results and the first relationship between cost and duration of building contracts appeared. First, the expected duration of each project was compared

with the actual, the result showed that only one contract in eight was completed on or before the date originally expected and the overall average extra time taken exceeded 40% of the original (Kaka and Price, 1991; Chan and Kumaraswamy, 1995). Whereas limited surveys of the performance of the building projects in Nigeria by Izam and Kolawole (1998), Odeyinka and Yusif (1997), Okpala (1987) have indicated that building projects in Nigeria overrun their initial duration by 115-300%.

The second part of Bromilow (1969) work was the build-up of the relationship between the actual construction cost of the building and the time taken. The equation describing the average construction duration as a function of project value was found to be:

$$T = KC^B \text{ (i)}$$

Where T = duration of construction period from possession of site to practical completion measured in working days

C = final project value in A\$ million adjusted to a cost index

K = a constant describing the general level of duration performance for A\$1 million project and

B = a constant describing how the duration performance is affected by project size as measure by value.

Bromilow (1974) developed this model from a survey of Australian building projects. Based on the projects analyzed, the value of K was found to be 350 working days, and B 0.30. The model according to Chan (1999) indicated that one factor (scope of the project as measured by construction costs in 1972 Australian dollars) principally determines construction time. This model showed that the contract period, T was a function of the cost of project, C. This relationship was summarized by Bromilow (1974) as $T = 313C^{0.3}$. Bromilow et al. (1980) re-studied the relationship between value and duration performance of building contracts in order to determine whether the above relationship held. The results showed that the relationship between construction duration and project cost in the 1980s still holds.

Ireland (1985) reported similar research to predict

the construction time of high-rise commercial project in Australia. He concluded that the best predictor of average construction time of high-rise of commercial buildings based on cost (in millions indexed to June 1979) was $T=219C^{0.47}$. This result gave an R^2 value of 0.576 and a significant level of 0.001. Kaka and Price (1991) conducted a similar survey not only on buildings but also on roadwork projects in the U.K. where a similar empirical relationship was deduced. The existence of this relationship was tested for significance within the small sample in each type of construction project in Hong Kong in 1994, (Chan and Kumaraswamy, 1995). They found that the time-cost relationship for both types of projects can be modeled in the form $T=CK^B$, as postulated by Bromilow (1969, 1974) and Bromilow et al. 1980. Yeong (1994) also studied the time-cost relationship of building projects in both Australia and Malaysia. His study confirmed that at 0.00 level of significance, the time-cost relationship of various projects were found to be:

$$T=269C^{0.237} \text{ (for Australian projects) and } T=518C^{0.352} \text{ for (Malaysian projects).}$$

Later Chan (1999) established the relationship for all building projects with the equation $T=152C^{0.29}$ for

building projects sampled in Hong Kong. Based on the available literature reviewed, it can be seen that the value of K ranges from 151-518 working days while the value of B ranges from 0.215-0.470.

RESEARCH METHODOLOGY AND DATA ANALYSIS

The archival data were collected from practicing quantity surveying firms operating in the Southwestern zone of Nigeria, with a large number of projects obtained from Lagos. Detailed cost information of completed projects executed between 1990 and 2000 were collected for 136 completed projects, out of which 82 were found useful for analysis. The tender sums used ranged from #1 million - #1,000 million, with about 77% projects falling into the range of #10 million and #200 million. These values were then adjusted to 1998 price index level using the standard Tables obtained from the Federal Office of Statistics to ensure homogeneity and eliminate biasness. In order to amend the power equation and test the Bromilow's time-cost relationship the equation was restated in its natural logarithmic format as:

$$\text{Log (CP) = log K + B log (TS) -----(i)}$$

Table 1: Model Summary for the Analysis

Model	R	R Sq	Adj R Sq	Std Error of the estimate	Change Statistics				
					Rsq change	F change	df1	df2	Sig.F change
1	.385	.148	.138	.178298	.148	13.940	1	81	.0000

Table 2: Coefficients and other statistics

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.521	.231		6.570	.000
LOGTS	.111	.030	.385	3.734	.000

Table 3: Residuals Statistics

	Minimum	Maximum	Mean	Std Dev	N
Predicted Value	2.145629	2.548792	2.381948	7.397E-02	82
Residual	-.355947	.374492	-1.06E-15	.177194	82
Std Predicted Value	-3.195	2.256	.000	1.000	82
Std Residual	-1.996	2.100	.000	.994	82

The hypothesis proposed for the study was therefore stated as:

Ho: $\log(\text{CP}) = \log K + B \log(\text{TS})$, there is no linear relationship between $\log \text{CP}$ and $\log \text{TS}$. If this hypothesis can be rejected at 5% level of confidence then it is true postulate that there is a form of linear logarithm relationship between Contract Period and Tender Sum transposed into the form $(\text{CP}) = K (\text{TS})^B$. The values of K and B, the calculated value of the test statistics, F, and the level of significance of association between $\log \text{CP}$ and $\log \text{TS}$ were computed at (5%) significance level using the SPSS package (SPSS2000). The outputs of the regression analysis are given in Tables 1 and 2 showing the summary, and the coefficients and other statistics for the model respectively.

(a) Predictors: (Constant), LOGTS and

(b) Dependent Variable: LOGCP

The values of $\log K$ or (K) and B in Table 1 were 1.521 (33) and 0.111 respectively. These findings showed that the contract period and tender sum had a relationship for building projects sampled in the study could be represented by the equation of the form:

$$\log \text{CP} = 1.521 + 0.111 \log \text{TS} \dots\dots\dots \text{(ii)}$$

The tabulated test statistics F at 5% level of significance has a value of 1.5374 as compared with the calculated F value of 18.30. Since table F value (1.5374) was less than the calculated F, then the null hypothesis was rejected. This rejection implied that statistically, the time-cost relationship for all Nigerian building projects sampled could be expressed in the form:

$$\text{CP} = 27 (\text{TS})^{0.111} \dots\dots\dots \text{(iii)}$$

A test for validity of the regression model conducted on residuals data showed the scatter plot of $\log \text{CP}$ and $\log \text{TS}$ fits reasonably well a straight line. Another method was to plot the residual against the predicted values such that if the assumptions of linearity and homogeneity of variance were met, then there should be no relationship between predicted and residual values. The residual statistics in Table 3 showed the dependent variable $\log \text{CP}$ to be randomly distributed in a band, clustered around the horizontal line with a mean value of 0. Thus it can

be interpreted that the assumptions of linearity and homogeneity of variance were met by the data used for the regression analysis.

Based on the results from the correlation and linear regression analyses, the hypothesis that an increase in $\log \text{CP}$ is associated with an increase in $\log \text{TS}$, is of the form $\log \text{CP} = \log K + B \log \text{TS}$ is true at the 0.000 level of significance. This is very much in line with the findings of Ireland (1985), Bromilow et al (1988), Kaka and Price (1991), Yeong (1994), Kumaraswamy and Chan (1995) and Chan (1999). In view of the outcome of this study, it's possible to conclude that Bromilow's time-cost model $T = KCB$ also holds in Nigerian construction industry with the predictor of the average construction time of building project represented by $\text{CP} = 33(\text{TS})^{0.111}$. This equation can be used in predicting the contract period from estimated tender sums.

The wide variations of values of K and B derived from data analysis, when compared with the values by other researchers focusing on other countries may be due to the factors that may be peculiar to the Nigerian construction industry. The equation derived can however serve as a convenient tool for project managers and clients for predicting the actual optimum time required for the delivery of building project and can be used as a basis for negotiations. Areas for further research should include high-rise office complex and civil engineering projects.

REFERENCES

- Ajanlekoko, K.O. (1987): "Controlling Cost in the Construction Industry". *Lagos Q.S. Digest*, Lagos. Vol. 1.
- Bromilow, F.J. (1969): "Contract Time Performance - Expectation and the Reality". *Building Forum* 1 (3), Pp70-80.
- Bromilow, F.J. (1974): Measurement and Scheduling of Construction Time and Cost Performance in the Building Industry, *The Chartered Builder*, 10 (9) June-July, Pp 57.
- Bromilow, F.J., Hinds, N. F. and Moody, N.F. (1980): AIQS Survey of Building Contract Time Performance. *The Building Economist*. September, pp 79-82.
- Chan, A.P.C. (1996): *Determinants of Project Success in the Construction Industry in Hong Kong*, Ph.D Thesis, University of South Australia.

Chan, A.P.C. (1999): 'Modeling Building Durations in Hong Kong', *Construction Management and Economics*, 17, pp 189-196.

Chan, D.W.M. and Kumaraswamy, M.M. (1995): 'A Study of the Factors Affecting Construction Duration in Hong Kong', *Construction Management and Economics*, 13 pp 319-333.

Chan, D.W.M. and Kumaraswamy, M.M. (1997): 'The Comparative Study of Causes of Time Overruns in Hong Kong Construction Project', *International Journal of Project Management*, 15 (1) pp 55-63.

Ireland, V. (1983): 'The Role of Managerial Actions in the Cost, Time and Quality Performance of High Rise Commercial Building Projects', *Construction Management and Economics*, 3, pp 59-87.

Izam, Y. D and Kolawole, J.O (1998): 'Factors Influencing the Duration Estimation Function of Construction Firm', *Nigerian Journal of Construction Technology and management*, Vol.1 No1 pp 74-78.

Kaka, A. and Price, A.D.F (1991) 'Relationship Between Value and Duration of Construction Projects', *Construction Management and Economics*, 9 (4) pp 383-400.

Mansfield, N.R., Ugwu, O.O. and Dorant, T.,(1994): "Causes of Delay and Cost Overruns in Nigerian Construction Projects", *International Journal of project Management*, 12,(4) pp 254-260.

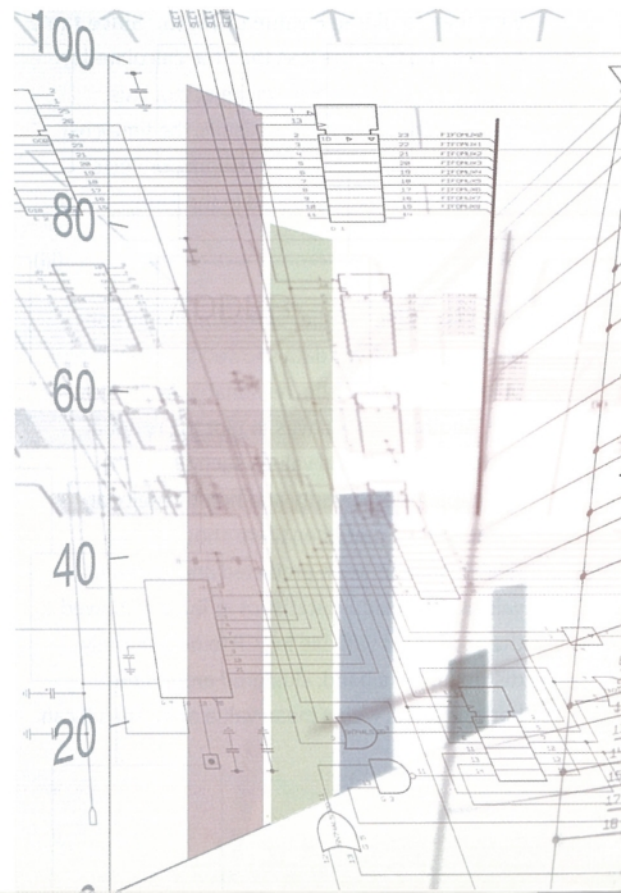
Odeyinka, H.A and Yusif, A. (1997): "The Causes and Effect of Construction Delays on Completion Costs of Housing Projects in Nigeria", *Journal of Financial Management of Property and Construction*.

Okpala, D.C and Aniekwu, A.N (1988): "Causes of High Cost of Construction in Nigeria", *Journal of Construction Engineering and Management ASCE* 114 pp 233-244.

Oma-Williams, O.W. (1991) Re-organizing for Project Management in Nigeria. *The Nigerian Quantity Surveyor*, September, edition pp 20-23.

Rwelamila, P. D. and Hall, K. A. (1995) Total Systems Intervention: An Integrated Approach to Time, Cost and Quality Management. *Construction Management and Economics*.

Yeong, C. M. (1994) *Time and Cost Performance of Building Contracts in Australia and Malaysia*, M.Sc. Thesis, University of South Australia.



Case Studies of Civil Engineering Measurement

Raymond Tong

MBA, Dip Law, BSc (Hons) FRICS, FHKIS, RPS (QS)
Senior Resident Quantity Surveyor, Ove Arup & Partners
Hong Kong Limited

INTRODUCTION

The scope of works which are deemed to be inclusive of the rates in the civil engineering Bills of Quantities are defined in the item coverage of the Standard Method of Measurement (SMM). The nature and extent of these activities are referred to the Contract Drawings, Specifications and Condition of Contract. Furthermore, it is described in the Standard Method of Measurement to be extended to cover general liabilities, obligations and risk inter alia all labour, materials, temporary work, plant, overhead charges and profit.

The common controversial areas of this “inclusive price” principle are experienced in the sufficiency of the item coverage, the ambit of general liabilities, obligations and risk when these contractual issues are required to be read in a mutually explanatory manner pursuant to the General Conditions of Contract for Civil Engineering Works (1999 Edition) Clause 5 sub-Clause (2). This loophole has become the Contractor’s usual tactics to initiate claims for missing items. Thus, entitled to create new rates to seek for financial adjustment.

CASE STUDIES

1 INTERPRETATION BY MUTUALLY EXPLANATORY MANNER OF DRAWINGS, SPECIFICATIONS AND BILL ITEMS

The Bills of Quantities measured Bill Items for the piling but no Bill Items for the ground instrumenta-

tion works. As a result, the Contractor claimed to seek ground instrumentation work as a missing item.

SMM Section 9 for cast-in-situ concrete piles describes in the item coverage to include monitoring of ground movement and ground-water levels. The Particular Specification specified the types of ground instrumentation installations such as ground settlement markers and piezometers and standpipes shall be required for monitoring of ground movement and ground water level. Drawings specified in the general notes the requirement to monitor the geotechnical instrumentation as shown on the geotechnical instrumentation layout plans prior to, during and after construction of the bored piles and pile caps.

To read these Contract Documents in a mutually explanatory manner gives the interpretation that the nature of the item coverage of the SMM Clause to include monitoring is specified in the Particular Specification as installations of ground settlement markers and piezometers and standpipes to the extent shown on the Drawings for geotechnical instrumentation layout plans. As such, it is not a missing item. It is deemed to be included in the Bill items for piling by the item coverage of the SMM for the measurement of piling.

2 INTERPRETATION BY MUTUALLY EXPLANATORY MANNER OF DRAWINGS, SPECIFICATIONS, BILL ITEMS AND CONDITIONS OF CONTRACT

The Bills of Quantities measured Bill Items for the closed circuit television (CCTV) inspection. This had been measured in the drainage section for the new works. But no Bill items have been measured for CCTV to the existing drainage system. As a result, the Contractor claimed to seek CCTV inspection to the existing drainage system as a missing item.

SMM Section 5 for drainage and ducts describes the itemization of CCTV inspection in Clause 5.62 that the measurement shall only be measured separately for establishment of inspection equipment and the different diameters of the pipeline. It has made no distinction between new and existing works. The Particular Specification specified the Contractor shall be responsible for the cost of repairs to the damages or obstruction of the existing drainage system as caused by the construction works. Drawings for monitoring specified in the general notes for the requirement to monitor the internal condition of the existing drainage before and after the construction works. General Conditions of Contract Clause 21 for the care of the works in sub-clause (1) specifies care shall include to cover any things whatsoever on the Site. Also, GCC Clause 14 specifies that it is the Contractor's liability to satisfy themselves of the sufficiency of the Bill rates to cover their obligations as set out in the Contract.

To read these Contract Documents in a mutually explanatory manner gives the interpretation that care of the existing drainage system is a contractual obligation under the General Conditions of Contract Clause 21 for care of the works. Its nature has been specified in the Particular Specification that the Contractor shall be responsible for the cost of repairs to the damages or obstruction caused by the construction works. The general note on a geotechnical instrumentation drawing has specified the use of CCTV for inspection to the existing drainage in order to monitor the internal conditions before and after the construction works. Therefore, it has been specified that CCTV inspection should also be used for pipeworks of the existing drainage system for the purpose of monitoring. Despite the Bill Items have been

measured in the new works section of the Bills of Quantities, it is by and large Bill Items for the whole project. Since the SMM does not distinguish CCTV inspection to new or existing drainage, the fact that these have been measured, by the look of the Bill quantities for the new works only could not preclude these items to be held for the existing drainage as well. Moreover, Clauses 2 of the General Principles and General Preambles of the SMM both states that Bill Items are for description of the work only. Its extent is to be referred to Drawings, Specifications and Conditions of Contracts. As it has been described in the drawing for geotechnical instrumentation and worded as care to the internal condition of the existing drainage pipework, it is formulated in the set out of this particular Contract intended as an obligation to care for the works. Therefore, the Bill rates in the abovementioned Bill Items in compliance with the SMM General Preamble Clause 2(xv) - *"liabilities, obligations and risks involved in the execution of the Works set forth or reasonably implied in the Contract"* shall be deemed to have included the cost of this contractual implication. Furthermore, GCC Clause 14 specifies that it is the Contractor's liability to satisfy themselves of the sufficiency of the Bill rates to cover their obligations as set out in the Contract. As such, the CCTV inspection to existing drainage is formulated not as a measurable item. So, neither could it stand for consideration of a missing item. It was deemed to be inclusive in the rates for the CCTV inspection as described in the Bill Items.

CONCLUSIONS

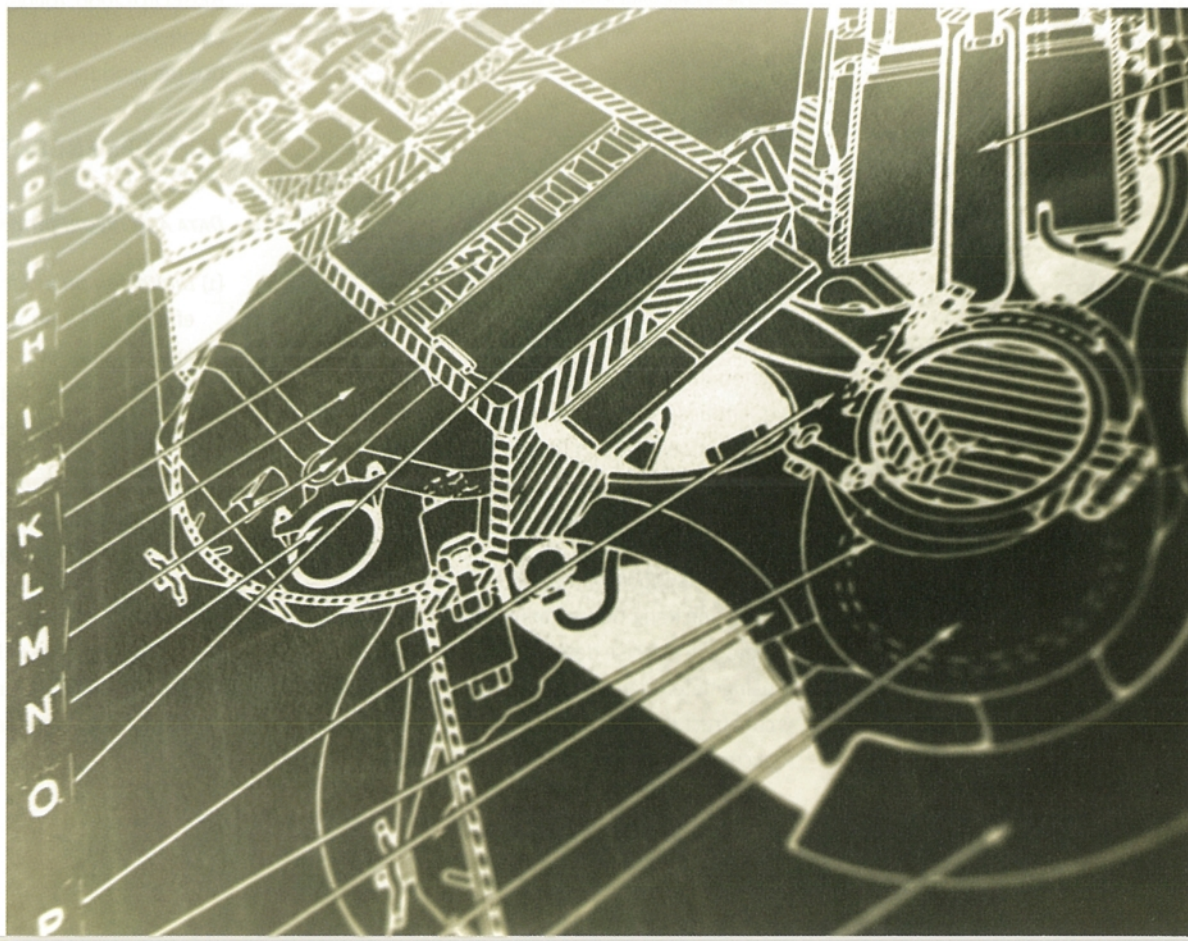
Due to the use of "inclusive price" principle in civil engineering contracts, missing items are common in the Contractor's claims for financial adjustment. As its principle is to use SMM to control Contract price by its method of measurement and item coverage, it is very much a quantity surveyors' domain.

The Government's common practice to employ Resident Quantity Surveyor in the post contract supervision stage of Civil Engineering works has shown the attitude to encourage multi-disciplinary practice of professionalisms in Civil Engineer-

ing projects. In view of civil engineering works which are contemporarily taking up a major proportion of the Government's expenditure and this phenomenon is anticipated to prolong into the near future, this is the field which we quantity surveyors should contemplate to win a stronghold in order to contribute our professional knowledge to serve society better.

POSTSCRIPT

*Though there is the case of **Bryant and Son v Birmingham Hospital Society Fund (1938)** which the English Court has established a case precedent for this type of claim based on the "inclusive price" principle, it after all could serve nothing more than an acknowledgement of its legal basis. The validity of each case is still relying a lot on interpretation of the SMM and circumstances such as clarification of tender prices at tendering stage and the activities of the construction works etc. of the individual cases. Therefore, the writer's intention behind this article is to inspire professional thinking from quantity surveyors and civil engineers. It is the consensus of them in a multi-disciplinary manner that could contribute fairness to the parties of the Contract in Civil Engineering works i.e. Government and Contractors.*



Hong Kong Geoid HKGEOID-2000

Chen Yong-qi, Luo Zhicai

Department of Land Surveying and Geo-Informatics,
The Hong Kong Polytechnic University

Simon Kwok

Geodetic Survey Section, Lands Department, HKSAR

ABSTRACT

This paper briefly discusses the data and methodology used in the construction of a Hong Kong local geoid of centimeter accuracy HKGEOID-2000. The results have been published in the website of Department of Land Surveying and Geo-Informatics, the Hong Kong Polytechnic University for public use. Users can directly obtain the geoidal height of a point by inputting its geodetic coordinates (in ITRF96 reference frame) or the HK1980 grid coordinates. Examples are given to illustrate the procedures.

The project has completed with a product HKGEOID-2000. HKGEOID-2000 has one-kilometer resolution and covers the whole territory of Hong Kong, from 800km to 850km in northing and 800km to 870km in easting in the HK1980 grid coordinate system. The tests showed that it can provide geoidal height at any point within the territory with accuracy better than 1.6 cm. The product is now ready for local professional community to use.

This paper firstly outlines the development of HKGEOID-2000, followed by its evaluation. Examples are finally given to demonstrate the way to use the product.

INTRODUCTION

GPS technique has been routinely used for the precise determination of the relative horizontal position between two points since late 1980s. But it has not gained wide applications in measuring height differences. The main reason is that GPS-determined height differences are geometric quantities, not referred to a local geoid. To promote application of GPS in height determination, a precise local geoid must be available for the transformation of GPS derived heights to leveled heights.

With the support of Research Grant Council (RGC) of the Hong Kong Government, the authors conducted a project "precise determination of Hong Kong geoid using heterogeneous data". Its main objective is to construct Hong Kong local geoid with centimeter accuracy using the existing data and information.

DEVELOPMENT OF THE HKGEOID-2000

DATA AND INFORMATION USED

- (1) *Digital terrain model (DTM)*. To compute terrain effects DTM with 100m resolution of Hong Kong and the southern part of Shenzhen was generated from the topographic maps using software 3D Analyst of ArcView GIS version 3.1.
- (2) *GPS/leveling data*. 55 high quality GPS/leveling stations in Hong Kong are provided by the Lands Department, HKSAR Government.
- (3) *Gravity data*. 640 gravity observations covering the land and sea of Hong Kong territories and 2158 gravity measurements with 1km resolution in Shenzhen were collected.

(4) *Geo-potential model*. After a detailed evaluation of several models using the data in the region, WDM94 was selected for the project. For details the readers are referred to (Luo and Chen, 2002a).

THE METHODOLOGY USED

A hybrid approach was used in this project. For details the readers are referred to (Chen and Yang, 2001; Luo and Chen, 2002b). The following three-step computation procedure was adopted.

Step 1: Determination of a gravimetric geoid using the remove-restore approach (Yang and Chen 2001).

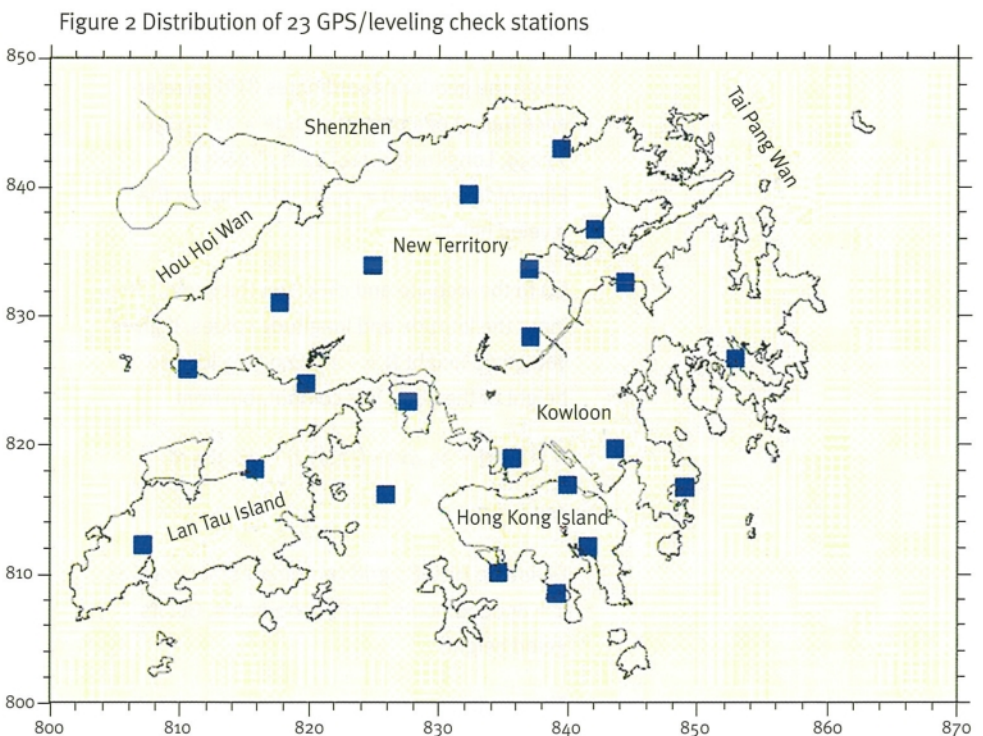
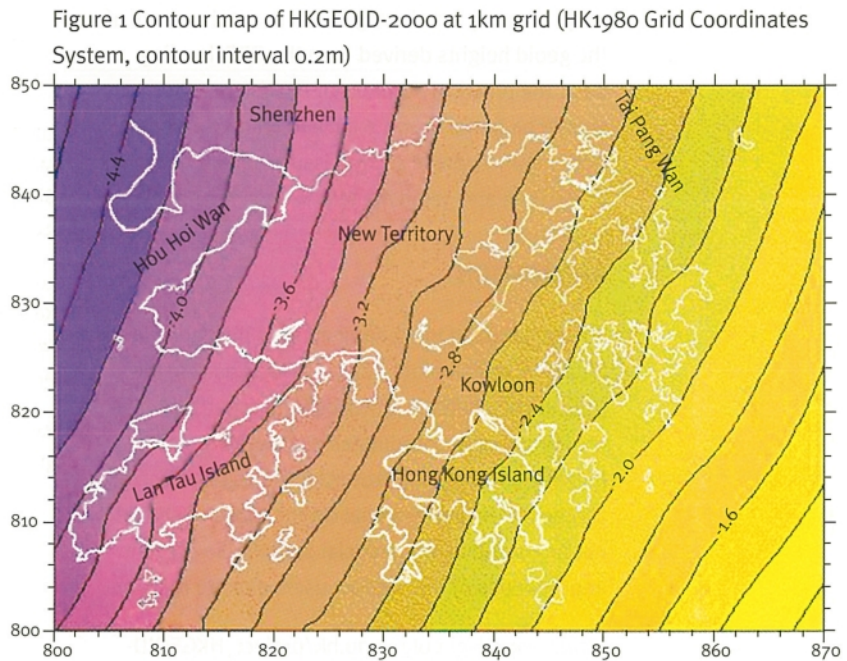
Step 2: Modeling of systematic biases. The gravimetric geoid may contain systematic biases with respect to GPS/leveling derived geoid. The biases may come from the difference between the gravimetric geoid and the leveling datum, and the long-wavelength systematic errors. To remove these systematic biases a least squares fitting was carried out to the GPS/leveling data.

Step 3: Refinement of the transformed gravimetric geoid. To improve the accuracy of the geoid, the GPS/Leveling data should be fully utilized. Therefore, local Shepard surface interpolation method is used to interpolate the residuals at one-kilometer grid. The residuals here are referred to the difference between the GPS/leveling derived geoid height and the transformed gravimetric geoid height. The final geoid was obtained by adding the residuals at one-kilometer grid to the above transformed geoid.

Such derived geoid is called hybrid or combined geoid, which is named HKGEOID-2000. Figure 1 shows the HKGEOID-2000.

EVALUATION OF HKGEOID-2000

23 precise GPS/leveling stations, which were not used in the construction of HKGEOID-2000, were employed to assess the accuracy of HKGEOID-2000. The estimated accuracy of the geoid heights derived from these GPS/leveling data is better than 2 cm. Figure 2 shows the distribution of these GPS/leveling stations. The accuracy of HKGEOID-2000 is



evaluated by comparing the geoid heights at these stations derived from the model N^{model} with that derived from GPS/Leveling N^{obs} in absolute or relative sense, i.e.

$$\Delta N = N^{\text{obs}} - N^{\text{model}}$$

and

$$\delta N = \Delta N^{\text{obs}} - \Delta N^{\text{model}}$$

The root mean square (RMS) of δN is 2.2 cm, and that of ΔN is better than 1 ppm for base line length longer than 25 km. Taking into account the errors of the geoid heights derived from the GPS/leveling data, the practical accuracy of HKGEIOD-2000 should be better than 1.6 cm and relative accuracy better than 1 ppm in 18 km (assuming that the errors of the data and geoid model have a similar size).

APPLICATION

The constructed Hong Kong geoid is published in the following website for public use. By inputting the position of a point in either geodetic coordinates or the HK1980 grid coordinates, users obtain geoid height as output. The product (data) is used free of charge for the professional community, but should not be re-sold for commercial purpose. To prevent improper use of the product users need to register.

http://www.lsgi.polyu.edu.hk/project_HKGEIOD-2000/index.htm.

Example 1

Given the geodetic coordinates (ITRF96 reference frame) of a point: Latitude = $22^{\circ} 31' 36''$. 77259, Longitude = $114^{\circ} 12' 27''$.86855, Ellipsoidal height $h = 35.413\text{m}$, compute the leveled height.

Go to the website and click “get the geoid”, then input the latitude and longitude values. It gives you geoid height $N = -2.972\text{m}$. The leveled height of the point H is computable from

$$H = h - N = 35.413 - (-2.972) = 38.385 \text{ m}$$

Example 2

Given the HK1980 grid coordinates of a point as $E = 850000.000\text{m}$, $N = 830000.000\text{m}$. Get its geoid height.

The result $N = -2.344\text{m}$

ACKNOWLEDGEMENTS

This research was supported by the Research Grant Council of Hong Kong SAR Government (B.34.37.Q328). The GPS/Leveling data of Hong Kong was provided by Geodetic Survey Section, Survey and Mapping Office, Lands Department, Hong Kong. And the gravity data of Shenzhen were supplied by Land Planning Department of Shenzhen, China.

REFERENCES

- Chen YQ and Yang ZJ (2001). A hybrid method to determine the Hong Kong geoid. Presented in FIG Working Week, May 2001, South Korea.
- Luo ZC and Chen YQ (2002a). Evaluation of Geo-potential Models EGM96, WDM94 and GPM98CR in Hong Kong and Shenzhen. *Journal of Geospatial Engineering*, Vol.4, No. 1, 21-30 June 2002.
- Luo ZC and Chen YQ (2002b) Precise determination of Hong Kong geoid using heterogeneous data, *Proceedings of FIG XXII International Congress*, Washington, D.C. USA, 19-26 April 2002.
- Yang ZJ and Chen YQ (2001). Determination of the Hong Kong gravimetric geoid. *Survey Review*, Vol. 36, No 279, pp. 23-34.

TIME LIMITS FOR COMMENCING ARBITRATION IN CONSTRUCTION CONTRACTS

K K Cheung

Partner, Deacons

INTRODUCTION

In general, a party who has a dispute with another party to the contract is entitled to bring legal action whenever he likes subject only to the statutory limitation periods. For contracts made under hand, the time limit for bringing legal action is 6 years after the cause of action has been accrued to him or her¹. For contracts made under seal, the time limit is 12 years². The cause of action is usually accrued when the other party breaches the contract.

For contracts with an arbitration clause, the time limits for commencing arbitration are usually similar to those for commencing legal action³.

The above applies to contracts with no special provision for limiting the time for commencing arbitration. Special provision is commonly found in construction contracts.

PRIVATE FORMS

Clause 30(7) of the Standard Form of Building Contract for use in Hong Kong (the HKIA or RICS Forms) provides that the final certificate issued by the architect shall be conclusive evidence in any proceedings arising out of the contract (whether by arbitration or otherwise) that the works have been properly carried out and completed in accordance with the terms of the contract which require an adjustment to be made to the contract sum (subject only to limited exceptions) unless a written request to concur in the appointment of an arbitrator shall

have been given by either party before the final certificate has been issued or by the main contractor within 14 days after such issue.

Whilst clause 30(7) does not limit the time for commencement of arbitration, it does prevent the arbitrator to re-open matters which are made conclusive by issue of the final certificate unless the main contractor commenced arbitration⁴ within the time limit of 14 days. It should be noted that the 14-day grace period does not apply to the employer. The employer (usually through the architect) must carefully check the work of the main contractor and make sure no over-payment has been made. If he has any claim to make against the main contractor, he should raise it before the issue of the final certificate.

There are court cases⁵ on the range of matters upon which the final certificate is stated to be conclusive evidence but they are beyond the scope of discussion in this article.

GOVERNMENT FORMS

Clause 86 of the Government Standard Form of Contract for Building Works contained complicated procedures for resolving dispute arising under the contract. For the purposes of the present discussion, clause 86 in essence provides that:-

- (1) All disputes should first be referred to the Architect.
- (2) The architect's decision is binding unless either

party requires that the matter be referred to mediation or arbitration.

- (3) If either party is dissatisfied with the architect's decision or the architect fails to give a decision, then the party may either mediate the dispute or commence arbitration within 90 days after receiving the Architect's decision or after the architect failing to give a decision within 90 days.

The Standard Sub-Contract for Building Works (2000 edition) also contains similar provisions for resolving disputes between the main contractor and the sub-contractor.

EXTENDING THE TIME

For private forms, the consequence of missing the deadline is that a party cannot in an arbitration or legal proceedings challenge the matters upon which the final certificate is stated to be conclusive evidence. For example, the employer cannot call evidence in an arbitration to prove that the materials and workmanship of a contractor do not comply with the contract requirements which should be to the reasonable satisfaction of the architect⁶.

Section 2GD of the Arbitration Ordinance provides that where an arbitration agreement provides for a claim to be barred, unless the claimant within a certain period takes a step to commence arbitration proceedings or to commence some other dispute resolution procedure that must be exhausted before arbitration can be commenced, the arbitrator (or if no arbitrator has been appointed, the Court) may extend the period if he is satisfied that:

- (1) the circumstances were such as to be outside the reasonable contemplation of the parties when they entered into the arbitration agreement, and that it would be just to extend the period; or
- (2) the conduct of one party makes it unjust to hold the other party to the strict terms of the agreement.

Since clause 30(7) of the HKIA or RICS Forms does not actually limit the time for commencing arbitration, section 2GD of the Arbitration Ordinance does not empower the arbitrator or the Court to extend the 14-day period. This has been confirmed by **Crown Estates Commission v John Mowlem & Co. Ltd.** when the English Court of Appeal dealt with a

similar situation. Although the wording of the English legislation⁷ is different from section 2GD, it is submitted that the same reasoning should apply.

Keating on Building Contracts⁸ suggests ways to attack a final certificate by arguing the following: -

- (1) the matters fall within the express exception to the conclusive effect of the certificate, e.g. fraud;
- (2) the issue is not within the range of matters upon which the certificate is stated to be conclusive evidence;
- (3) technical irregularity in the giving of the final certificate e.g. it was not issued by the person named as the architect in the contract; and
- (4) the architect was disqualified at the time when he gave his certificate.

For Government Forms, a party cannot commence arbitration before referring the dispute to the architect for decision. Thereafter, the party must comply with the time limit for commencing mediation or arbitration. This type of clause falls exactly into the ambit of section 2GD of the Arbitration Ordinance. The party in delay may apply to the arbitrator or the Court for extending the time limit for commencing arbitration.

In the English case **Harbour and General Works Ltd. v Environment Agency** (1999) 68 Con LR 1, the plaintiff contracted on ICE Conditions (6th edition). Clause 66 of the contract is similar to clause 86 of the Government Forms. The Court of Appeal refused to grant the plaintiff an extension under section 12 of the Arbitration Act which is similar to section 2GD of the Arbitration Ordinance.

The judgment of the English Court of Appeal is interesting. It held that :

- (1) The provision in s.12 of the Arbitration Act concerning extensions of time was based on the principle of party autonomy. In general, the parties were free to agree their own timetable and, once they had agreed, they should keep to it. The dispensing provision was designed to deal with situations where the parties would not reasonably have contemplated the circumstance being one where the time bar would apply.

- (2) Failure by one party or its solicitors to read the contract and to see what the timings were was not such a circumstance.
- (3) In the circumstances, there was no obligation on the respondent to point out to the claimant that he was dangerously near the end of the time limit for starting arbitration.
- (4) There was no substance in the argument that there was no engineer's decision under clause 66 until the final payment certificate had been issued.

One example given in the judgment of the **Harbour** case, which might justify extending the time for commencing arbitration, is that the notice to arbitrate was put through the wrong letterbox (presumably not deliberately).

CONDITION PRECEDENT?

Clause 86 of the Government Forms does not expressly provide that failure to comply with the time limit to commence arbitration will bar a party's claim or extinguish a party's right. The opposing party may argue that the wording "*such decision [the architect's decision] shall be final and binding upon the contractor and the employer unless either of them shall require that the matter be referred to mediation or arbitration or hereinafter provided*" achieves the same effect.

The right to arbitrate is an important one. There is a general principle in law relating to construction of notice provisions that for a notice to be a condition precedent to exercise of important rights under a contract, clear express language should be used in the contract⁹. Applying this principle, there is still room for the argument that the wording of clause 86 is not clear enough to create a condition precedent to the right to arbitrate.

It is not apparent that the above argument has been raised in the **Harbour** case. How it will fare in Hong Kong courts remains to be seen. Harman LJ gave a warning in **Monmouthshire County Council v Costelloe & Kemble Ltd. (1965)** 5 B.L.R. 83 which might lend some support to the above argument. His Lordship said that contractual provisions have to construe "with some strictness" and "against the person putting [them] forward" if they are said "to shut out the ordinary citizen's right to go to the court

to have his grievances ventilated".

However, the warning of Harman LJ was described by the Hong Kong Court of Appeal¹⁰ as a rather outdated view in the modern climate of alternative dispute resolution and of disputes over major construction projects commonly being resolved by arbitration as a result of an arbitration clause. The warning of Harman LJ should be modified to apply to arbitration instead of court proceedings so that the adverse comments of the Hong Kong Court of Appeal may be watered down.

LITIGATION AS AN ALTERNATIVE?

If the right to arbitration is lost, can a party go to court to resolve the dispute? The question has been considered by the Hong Kong Court of Appeal in **China Merchants Heavy Industry Company Limited v JGC Corporation [2001] HKCU 600**. Counsel for the plaintiff in that case argued that the plaintiff's failure to comply with the time limit prescribed in the contract for commencing arbitration rendered the arbitration agreement "inoperative" within the meaning of Article 8(1) of the UNCITRAL Model Law (which applied in Hong Kong by reason of section 6(1) of the Arbitration Ordinance).

Article 8(1) of the UNCITRAL Model Law provides as follows:

"A court before which an action is brought in a matter which is the subject of an arbitration agreement shall, if a party so requests not later than when submitting his first statement on the substance of the dispute, refer the parties to arbitration unless it finds that the agreement is null and void, inoperative or incapable of being performed."

FAILURE TO GIVE DECISION

The Court of Appeal disagreed with the plaintiff's argument and upheld the decision of the Court of First Instance that if the right to refer the dispute to arbitration was held in the arbitration to have been lost by the failure to comply with the time limit, there was no other route by which it could contest the decision of the defendant (equivalent to the architect's decision under clause 86 of the Government Forms).

Is the position different if the architect fails to make a decision and neither party refers the

matter to mediation or arbitration within the prescribed time limit?

The answer is not clear for the above question. If compliance of the time limit to give notice is a condition precedent to arbitration, even there is no architect's decision to bind the parties, the claimant is barred to pursue his claim. In such event, the party aggrieved has to live up with the existing position of the parties. For example, if the employer is not satisfied with the materials or workmanship of the contractor, he will have no remedy against him. It is arguable that the employer is still entitled to set off the loss and damage suffered by reason of the inferior materials or workmanship against any monies which is later found to be due to the contractor under the contract.

Further complication may arise in the situation where although the architect has made no decision on the request of either party under clause 86 of the Government Forms, the subject of dispute is on the earlier decision of the architect himself, for example over the issue of the maintenance certificate. The 16th Edition of **Keating on Building Contracts** (at page 1094) suggests that it remains arguable that the party aggrieved may serve a fresh notice of dispute to the architect but in the light of the **Crouch** decision¹¹, the party may still be bound by the Engineer's certificate. The reason for this conclusion is that the arbitration machinery has to be regarded as the exclusive means of challenging decisions under the contract which, in the absence of such machinery, are not open to challenge.

However, **Crouch** has been expressly overturned by the House of Lords in **Beaufort Developments Ltd. v Gilbert-Ash Ltd.** [1999] 1 AC 266. There is now no legal principle preventing the architect from making a decision on the fresh notice of dispute under clause 86. Of course, the party must be careful not to miss the deadline for the second time after receiving the architect's decision or the architect failing to make any decision.

CONCLUSION

The above discussions on the legal principles may appear to be complicated but the advice can be very simple - read your contract and don't miss the deadline. The judgment in the *Harbour* case mentioned above is a timely reminder to the unwary.

REFERENCES

- 1 Section 4(1)(a) of the Limitation Ordinance (Cap.347)
- 2 Section 4(2) of the Limitation Ordinance (Cap.347)
- 3 Section 34 of the Limitation Ordinance (Cap.347)
- 4 Section 31 of the Arbitration Ordinance (Cap.341) provides that an arbitration shall be deemed to have been commenced when one party to the arbitration agreement serves on the other party a notice requiring him to appoint or concur in appointing an arbitrator.
- 5 For example, *P&M Kaye v Hoiser & Dickinson* [1972] 1 W.L.R. 116, *Fairweather v Asden Securities* (1979) 12 B.L.R. 76 and *H. W. Nevill (Sunblest) v W M Press* (1981) 20 B.L.R. 78, *Crown Estates Commissioners v John Mowlem & Co.* (1994) 70 B.L.R. 1 and *London Borough of Barking & Dagenham v Terrapin Construction Ltd.* [2000] B.L.R. 479.
- 6 See *Crown Estates Commissioners v John Mowlem & Co. Ltd.* (1994) 70 B.L.R. 1.
- 7 Section 27 of the Arbitration Act 1950, which has now been replaced by section 12 of the Arbitration Act 1996.
- 8 17th Edition at paragraph 18-434.
- 9 Please see *Bremer Handelsgesellschaft mbh v Vanden Avenne-Izegem* [1978] 2 LLR 109.
- 10 *China Merchants Heavy Industry Company Limited v JGC Corporation* [2001] HKCU 600.
- 11 *Northern Regional Health Authority v Derek Crouch* [1984] Q.B. 644.

How Planning and Land Policy could be used to enhance conservation

Roger Nissim

FRICS, FHKIS

Project Planning Manager,

Sun Hung Kai Properties

There has been much talk about the “Environment” “Conservation” and “Sustainable Development” over the past five years but we still await a coherent statement of policy on these subjects from our Government.

Fortunately there have been a number of significant or even landmark events in this new century that should help steer Government in the right direction and help shape policy in these very important areas.

Under the existing Environmental Impact Assessment (EIA) Ordinance designated project proponents are required to obtain environmental permits (EP) from the Director of Environmental Protection (DEP) before construction or operation of the project commence. In October and November 2000, the DEP rejected two applications for an EP, one was for the proposed Lantau N-S link between Tai Ho Wan and Mui Wo cutting through the Lantau Country Park and the other, more famous case, was for the KCRC proposal to construct a Spur line from Sheung Shui Station to the new border crossing at Lok Ma Chau which involved passing through Long Valley. The KCRC appealed against the DEPs decision and in September 2001 the Appeal Board dismissed KCRCs appeal.

I would like to draw your attention to some of the more pertinent paragraphs of the Appeal Board’s decision:

(a) During the public consultation period for the KCRC EIA, the DEP received 225 submissions from the public, each of which opposed the project;

(b) Under the paragraph entitled “The Implementation of the EIA Process” the following words occur:

“There are two main matters of public interest involved. Both are important. The first is the public interest in the protection of the environment upon which the quality of life in Hong Kong will increasingly depend. The second is the public interest in ensuring that major designated projects are brought to fruition in a timely and efficient manner...”

To my mind it can now clearly be established that the protection of the environment, conservation is now a “public purpose”. It would not have been possible to make this statement so unequivocally 10 or even 5 years ago but today we can. Why am I trying to make this subtle shift from public interest to public purpose? Because public purpose is one of the criteria under the Land Resumptions Ordinance that can trigger a compulsory acquisition of private interests by the Government and in any new policy initiative Government must recognize and acknowledge they may need to use this tool to achieve effective conservation.

The purpose of the EIA Ordinance is expressed in its title “to provide for assessing the impact on the environment of certain projects and proposals, for protecting the environment and for incidental matters”. However it does not cover conservation per se where no development is intended and it is this gap which needs to be addressed by any new policy.

The present conservation framework is well described by the Conservancy Association's August 2000 paper entitled “Achieving Conservation – A Positive Conservation Policy for Hong Kong”, as follows:

The current legal framework for conservation is embodied primarily in the Country Parks Ordinance and the Town Planning Ordinance. In the case of country parks, conservation is the stated Objective and this objective is by and large served by the Ordinance. For areas of conservation interests which fall outside country parks, the conservation intention is expressed through zoning the sites as Conservation Area (CA) under the Town Planning Ordinance. Both country parks and CA zones can cover large areas. Within these areas some specific sites may be designated Sites of Special Scientific Interests (SSSI), which provides more stringent control over land use, and hence greater protection of the sites from disturbance. The Agriculture, Fisheries and Conservation Department are the expert department within government for conservation, country park management and the designation of SSSI's.

The present framework is, however, too simplistic and often ineffective as far as the conservation objective is concerned.

First, such a framework does not cover areas with high conservation value that fall under other zoning. A case in point is areas zoned Agriculture, which may consist of areas of high cultural or ecological value but which would not be protected because conservation is not the state intention of the Agriculture zone. Similarly, other zoning such as the village zone and the residential zones may contain buildings of high heritage or cultural value which are not protected under their respective zoning.

Secondly, even for areas zoned CA or SSSI, the planning intention of conservation may not be

realized if the conservation value is progressively diminished, either through willful destruction e.g. war games or as a result of natural degradation or by the misuse of pesticides. In other words, although conservation is the stated objective, such objective can be defeated either by lack of land management or by the inability of enforcement over destructive or inappropriate uses.

Thirdly, even if the conservation objective is well served (naturally or through active management), the areas may still yield to development due to competing uses, such as improvement in transport or demand for housing (for example, to accommodate the rising demand for houses for indigenous villagers). There are strong advocates within the government for these competing objectives, all of which are backed by strong policy frameworks. By contrast, the present conservation framework is incomplete and does not provide enough basis for the conservation department (AFCD) to be an effective advocate for the conservation objective commensurate with its value to society.

In recent years there has been a subtle but significant shift in the way the Planning Department deals with new land use zoning. Consider that when the Country Parks were originally set up in 1970/80, they only ever covered Government owned land. Private land, usually village land, was excluded. Today the position has changed with the Planning Department prepared to zone large areas of privately owned land, usually described for agricultural purposes on the Block Crown Lease, usually to CA or conservation zoning. A lot of this land is lying fallow and unused and with the CA zoning that is how it will remain. Agricultural activities can often be incompatible with conservation objectives and the ownership rights must be respected and treated fairly. Under this system they are not! At Wu Kau Tang in July 2000, 87 hectares out of a total area of 103 hectares has been zoned CA and similarly at Tai Long Wan in October 2001, 46.5 hectares out of 50.5 has also been zoned CA. In both cases, large percentages are privately owned.

Let us also consider the new OZP that was approved in February 2002 for Sha Lo Tung which was designed to protect its important ecological,

currently 68 species of dragon flies are recorded in the area, and cultural features. The 57 ha area designated in the OZP comprises about 22 ha as SSSI (covering the streams, a 30m buffer on either side and freshwater marshes in the northeast of the site), about 12 ha of conservation area covering the freshwater marsh, fung shui woodland behind Cheung Uk and mature tree clusters behind Lei Uk and Lo Wai, about 22 ha of green belt covering foothills, lower hill slopes, spurs, isolated knolls, woodland or vegetated land and about 2 ha of village type development. Provision of sewerage and emergency vehicle access may be necessary for the village development areas. To preserve the Hakka village houses any demolition, addition, alteration to the existing village houses requires planning permission.

The fundamental weakness in the present framework can be summed up by saying that conservation by zoning alone is far too passive but perhaps, more importantly, because these zonings now include large tracts of private land and for conservation to be done in a meaningful way it requires mechanisms for active management and a system for bringing private land into the scheme of things which may, or may not, involve resumption but will need to ensure that the private land owners are either adequately compensated or encouraged to actively participate.

The areas of particularly high or significant ecological or conservation value are generally well known, about half a dozen or so, such as Tai Long Wan, Wu Kau Tang, Sha Lo Tung, Long Valley, Tai Ho Valley and Sham Chung whose transfer away from private ownership could now be said to constitute a public purpose. I suggest that as a first step maybe the Town Planning Board (TPB) on the advice of the Advisory Committee for the Environment, should endorse these 6 sites, plus any others that may have been omitted, as being Grade A conservation sites that warrant public intervention in order to guarantee their survival. This could be the formal mechanism for confirming the public purpose in the same way that TPB can recommend resumption of any land that interferes with the layout of an area shown on a Master Layout Plan approved for a CDAs. At the same time TPB

could prioritize these sites identifying which ones should be tackled first, may be one a year?

However, in today's climate of high deficit budgets we cannot realistically expect funds for resumption to be easily forthcoming so other land exchange/land swap mechanisms need to be explored to assist in the implementation of any meaningful policy. Interestingly this same problem was referred to by John Tsang, then Permanent Secretary for Planning & Lands, in his speech to the Hong Kong Institute of Architects in December 2001 when he outlined his ideas on the subject of transfer of development rights for the preservation of historical buildings in Hong Kong. He said:

"The success of Hong Kong is couched in the operation of market forces. We cannot expect the developers to turn away from their objective to maximize profits and to volunteer to preserve historical buildings in the community without any return. They just don't behave like that. Nor can we expect Government to acquire all the historical buildings in the open market or to resume them under the Lands Resumption Ordinance. That is not the best use of public revenue and is, any way, just too expensive. It would be better if we can employ market forces to pay for the preservation of these historical buildings. Providing an incentive for property owners to encourage them to preserve these historical buildings is one way and TDR could be such an incentive."

I can see no reason now why this philosophy and approach cannot be applied more widely to the best conservation sites.

With the leasehold tenure system clearly established here this Government has got a greater advantage than probably any other Governments in the world in having the tools at its disposal for being able to come up with a variety of solutions to assist positively in promoting a meaningful conservation policy. Let me share with you some of the possible options that may be considered:

- (a) Letter C – for conservation. This is not a new concept. Back in the 1960's through to 1983 Letters A/B were issued by the Government as an alternative to cash compensation when private land was resumed in the New Town Development Areas of the New Territories.

This system was introduced at a time when the Government, as it is today, was short of cash. The exchange rate was 2 sq. ft. of building land for every 5 sq. ft. of agricultural land surrendered, building land surrendered was exchanged on a foot for foot basis. Because of the inherently lower value of the agricultural land we are now talking about I would suggest an exchange rate of say 1 to 5 for agricultural land but retain foot for foot for any building land taken. The new Letter C should then be monetized giving it a face value equivalent to building land value in the same District assuming say a plot ratio of 1 similar to village development. The face value of this Letter C could then be used by the registered owner in any subsequent land related transaction be it payment of premium, government rent, property tax or whatever. This method is probably most suited for those sites that are in fragmented, multiple ownership. Where sites have been consolidated into a few or even single ownership the following methods, which do not require resumption, may be considered.

- (b) An in-situ land exchange can be considered in sites for example under the new zoning OU (Comprehensive Development and Wetland Enhancement Area). This zone is intended for conservation and enhancement of ecological value and function of existing fishponds or wetland through consideration of application for development or redevelopment under the "public-private partnership approach." Low density private residential or passive recreational development within this zone in exchange for committed long-term conservation and management of the remaining fish ponds or wetland within the development site may be permitted subject to the 'no-net-loss in wetland' principle and planning permission from the TPB. Any new building should be located farthest away from Deep Bay. I will go through a recent case based on this method at the end of my presentation.
- (c) A non-insitu exchange. Although the administration has in the past been reluctant to use this tool there are some good examples when this mechanism has been used for proactive

town planning. Examples are the relocation of offensive activities such as cement plants on Tsing Yi or oil depots at Ap Lei Chau and Cha Kwo Ling. Conservation is now sufficiently high on the public agenda that there is no reason why the same positive approach cannot be adopted for what I call Grade A sites. I would suggest the same exchange ratios I put forward under the Letter C option.

The beauty of the land administration system is that it is not bound by legislation in the same way that town planning and building control are. This means that Government can, administratively, adjust and change the rules to suit the circumstance of each particular case, there is a high degree of flexibility that enables them to respond to these new pressures relatively easily.

The second problem I have identified is the need for proper active management of these Grade A areas as I call them. The reason these areas are considered to be Grade A are because of their unique biodiversity that supports species of fresh water fish, birds, butterflies, dragonflies, frogs or whatever. Unlike the Country Parks which require relatively low maintenance, low tech approach such as footpath maintenance, slope protection etc. these areas require a much higher level of management that can only be achieved with a dedicated team in place.

The best examples in Hong Kong are probably Kadoorie Farm and Botanical Garden in Lam Tsuen Valley and Mai Po Marshes run by WWF. They both operate on very modest budgets with the non-profit making structure of a charitable trust. A number of NGO's such as Civic Exchange and the Conservancy Association have advocated the setting up of the Hong Kong Conservation Trust similar to that of the National Trust of the U.K. There is a lot of sense in this idea because it would be inefficient for a separate Trust to be set up for each individual site. There is no need to duplicate the administration side of things or, perhaps more importantly, dilute the expertise available with competing employers. A single Trust would also be better placed to fund raise, have a higher profile in PR terms for example promoting Hong Kong as a genuine eco tourism destination.

The two land exchange options I have outlined earlier would result in the Grade A's sites being surrendered to Government who could then pass the land over directly to the Trust for ongoing management. If the land being surrendered needed some capital works being done say to improve drainage, change pond levels then there is no reason why this should not be seen as contingent to development and therefore be included in the land premium assessment. Indeed I would go one step further and suggest that Government should allocate a percentage of any such land premium generated by these conservation exchanges back to the Trust as working capital to guarantee it a sound financial basis. Developers should also be asked to make a contribution in the form of a development permission levy of say \$x per sq. ft. of g.f.a., perhaps on a sliding scale depending on the amount of g.f.a. granted.

The beauty of the ideas I have suggested are that it does not require any additional staffing resources for Government. The creation of a local Conservation Trust would outsource the future management and operation side of things to a dedicated committed group who would employ the necessary staff with the right qualifications and funding could be provided from the land premium generated, this would be by way a revenue foregone rather than a drain on existing Government funds.

REFERENCES

- 1 The Conservancy Association Achieving Conservation – A positive conservation policy for Hong Kong – August 2000
Home page: <http://www.conservancy.org.hk>
- 2 Civic Exchange - Conservation in Hong Kong - June 2002
Conservation of Sha Lo Tung - A way forward
Home page: <http://www.civic-exchange.org>



The Attributes of a Successful Estate Agent

Raymond Y C Tse, K F Man and Lawson S M Chang¹

ABSTRACT

How people believe others perceive themselves often, at least partially, determines their behaviour. This study analyses how the general public perceives the professional image of the estate agents serving them after the establishment of the Estate Agents Authority in Hong Kong. In addition, how estate agents view themselves, whether their practice is up to the standards of the Estate Agents Authority and how they might improve their practice and professional image, are also examined.

INTRODUCTION

In Hong Kong, the estate agency industry began to develop at the end of the 60's when it was accepted that interests in land could be divided into undivided shares for high rise residential development and the method of purchasing one's home by taking out a mortgage was widely accepted by the general public. The number of transactions was also given a boost by the introduction of the Land Officer Consent Scheme, which makes pre-sale of large residential development possible, with Mei Foo Sun Chuen being the first case. According to statistical information, only 395 estate agency shops were established in 1981, but the number of shops was increased to 1,560 in 1988 and 2,803 in 2001. In the 1990's, the growth of the number of estate agents became more rapid. With the number of transactions

increasing rapidly and the ever-increasing amount of money involved in each transaction, there was a growing voice asking for the monitoring of the practices and ethics of estate agents. The purchase of a flat or house is the single largest investment undertaken by most individuals or families, and thus, it is of utmost importance that they are offered services of high professional standards in a market with easy, publicly available information.

On 21 May 1997, the Estate Agents Ordinance was passed by the then Legislative Council. Under this Ordinance, a statutory body, Estate Agents Authority was established to promote the standard of services of the estate agency trade in Hong Kong, enhance protection for consumers, and encourage open, fair and honest property transactions. A licensing system for the estate agency trade came into effect from 1 January 1999. An individual or a company carrying on estate agency work on and after 1 January 1999 has to hold a valid licence issued by the Estate Agents Authority: it is an offence for anyone to practise estate agency work without a licence from that date on. Also, the Practice Directions are issued by the Estate Agency Authority for the purpose of providing guidance and directions to practitioners in the conduct of estate agency work. These Practice Directions became effective on 1 November 1999 and superseded the previous Practice Directions issued by the EAA on 1 January 1999.

LITERATURE REVIEW

In recent years, the real estate sales business has been widely examined. Crockett (1982) examined the function of the market for brokerage services for residential real estate. Webb (1988) analysed the assimilation of new services while Zumpano, Elder and Crellin (1993) analysed the market for residential real estate brokerage services. Johnson and Loucks (1986) focussed on the effect of state licensing regulations on the industry. Schoeter (1987) analysed competition and value-of-service pricing while Turnbull (1996) focussed on non-price competition in the level or quality of services offered to buyers and sellers in the market. Johnson et al. (1988) argue that the individual broker is more important than the firm is to home sellers in selecting an agent, since prior acquaintance with the agent is the primary factor in considering an agent. Alternatively, Webb (2000) found that education before licensing remains the single most important thing that could be done to enhance the professional image of real estate brokers. More recently, Tse and Webb (2002) stated that information technology has significantly changed the way real estate firms are organized, the methods many real estate professionals adopt in marketing properties and services, and the extent to which homebuyers/sellers can get directly involved in the heterogeneous real estate market. In short, the service quality theme in residential real estate brokerage research has become very popular.

OBJECTIVE OF THE STUDY

This study was to find out the images of the Estate Agents Authority and practicing estate agents, under the monitor of the Estate Agents Authority, in the eyes of the general public, and to determine the basic factors for professionalism of estate agency works.

IMPORTANCE OF THE STUDY

Since the Practice Directions became applicable on 1 November 1999, the general public voiced out their concerns on the ethics of estate agents and data privacy of owner's information. This study would help us understand what attributes of estate agents are considered more important by

the public and what standards should be maintained by the Estate Agents Authority.

METHODOLOGY

In this study, a questionnaire was drawn up to collect the opinion toward the professionalism of estate agent from the general public. The questionnaire was divided into three parts: (1) the understanding of the Estate Agents Authority and Estate Agents Ordinance by the public (2) the image of estate agent under licencing by the Estate Agents Authority and (3) demographic information of candidates. The language of the questionnaire was Chinese and a sample of the questionnaire and its English version is attached in the Appendix. About 200 sets of questionnaires were sent with 137 returned. The qualified candidates are those over 28 years old. After collecting all the questionnaires, the data was treated by simple statistical analysis. Conclusion and recommendation were made on the basis of the findings.

FINDINGS

As just mentioned, 137 sets of questionnaires were collected, however, only 134 of which qualified. Questions 1 and 2 asked for the knowledge of the candidates on the nature and function of the Estate Agents Authority (EAA). The overall results are summarized in Table 1(a). Although most of them (61%) could pick the correct answers, nearly 40 percent of them were not sure of the nature of EAA. It was quite alarming to see that one quarter of those who were working in the real estate brokerage field did

Table 1(a) Respondents' knowledge on the function of Estate Agents Authority (EAA)

	Answer	Number	Percentage
Q1: Which kind of organisation does EAA belong to?			
	A (Public body)	47	35
	B (Private entity)	4	3
	C (Statutory organisation)	82	61
	D* (None of the above)	1	1
Q2: Do you think EAA can handle any complaints/disputes on commissions?			
	A (Yes)	99	74
	B (No)	35	26

Note: In Q1, the correct answer is C (statutory body).

Table 1(b) Distribution of respondents in answering Q1

Answer	Overall (%)	Client (%)	Non-client (%)	Agent (%)	Non-Agent (%)
A	35	21	40	34	36
B	3	6	2	2	3
C	61	73	57	62	61
D	1	0	1	2	0

Table 1(c) Distribution of respondents in answering Q2

Answer	Overall (%)	Client (%)	Non-client (%)	Agent (%)	Non-Agent (%)
A	74	79	72	70	76
B	26	21	28	30	24

Table 2 Summary of mean scores for real estate agents and clients in Q3-13

Question / Mean scores	Overall	Client	Agent
EAA can effectively supervise real estate brokerage firms	4.276	4.176	4.468
EAA can handle the arguments between agents and customers openly and fairly	4.246	4.235	4.319
After issuing licence, estate agents are more professional than before	4.866	4.794	4.723
After issuing licence, the services provided by estate agents are better than before	4.470	4.265	4.362
After issuing licence, property transaction is more open than before	4.418	4.235	4.426
After issuing licence, property transaction is fairer than before	4.254	3.941	4.191
After issuing licence, property transaction is more honest than before	4.306	4.029	4.511
After issuing licence, you have more confidence with estate agent	4.679	4.618	4.553
After issuing licence, purchaser and vendor are under better protection	4.828	4.706	4.532
Practice Directions, which is prepared by EAA, can govern estate agents to provide professional service	4.619	4.559	4.468
The current licensing system can control the quality of estate agent effectively	4.351	4.382	4.426

not believe that EAA could handle any complaints/disputes on commissions.

In this study, we had 4 types of respondents:-

1. *Client* – the person who has experienced the service of an estate agent;
2. *Non-client* – the person who has not experienced the service of an estate agent;
3. *Agent* – the person who has worked in real estate brokerage; and
4. *Non-agent* – the person who has not worked in real estate brokerage.

Tables 1(b) and 1(c) summarize the distribution of the four types of people answering Q1 and Q2 respectively. It appears that the persons with experiences in using real estate brokerage services tend to perform better in Q1 (73% of respondents chose the right answer C, compared to 57% of the no-experience respondents). However, it is surprising that the practising real estate agents do not perform better than non-agents in Q1. On the other hand, all of the four types of respondents have quite similar patterns in answering Q2. On average, about one quarter of respondents does not believe that EAA can handle complaints/disputes on commissions.

Question 3 to Question 13 asked for the general impression on estate agents and the Estate Agents Authority after the licensing requirement and Practice Directions are in place. People generally think that estate agents become more professional and faithful, though the changes are not significant.

As shown in Table 2, only the mean scores of questions 5, 10, 11 and 12 are greater than 4.5, the rest are close to or below 4.5 (same as before licensing).

Question 14 asked for the minimum education level of a professional agent. It is widely accepted that Form 5 or above is the minimum requirement. However, about 60% of the respondents suggested a higher education level (above Form 5) to be the minimum entrance

Table 3 Distribution of respondents in answering Q14

Answer	Overall (%)	Client (%)	Non-client (%)	Agent (%)	Non-Agent (%)
A	0	0	0	0	0
B	40	41	40	49	36
C	28	26	28	21	31
D	24	24	24	17	28
E	7	9	6	13	3
F	1	0	2	0	2

Table 4 Q15 - Ranking of important attributes for a professional real estate agent (Mean scores)

Choice / Priority	Overall	Client	Agent
Knowledge	2 (2.448)	2 (2.176)	2 (2.298)
Information	4 (3.478)	3 (3.265)	4 (3.234)
Honesty	1 (1.828)	1 (1.706)	1 (2.234)
Training	3 (3.224)	4 (3.647)	3 (3.191)
Communication	5 (4.134)	5 (4.147)	5 (3.872)

requirements of a real estate agent (Table 3). The four types of respondents have quite similar patterns in answering this question.

It appears that Form Five level is widely accepted as the minimum education requirement for a professional real estate agent.

Question 15 asked for the most important attribute for a professional estate agent (Table 4). Both clients and agents hold the view that "Honesty" should be the most important attribute (overall mean score = 1.828), while real estate knowledge comes second (overall mean score = 2.448). The only difference is market information and professional training, but the difference is small. In general, professional training is considered more important than market information.

The least important attribute is communication skill, although the communication skill is the important key of being a successful estate agent.

By comparing the answers of different groups of people, it is noted that the patterns of importance are quite similar, indicating that there are no biases for people of different backgrounds in this survey.

CONCLUSIONS

It appears that "honesty" is the main concern of the customers buying real estate agency services. Why is this the case? Does this reflect something deeper in the operation of the trade?

We all know that competition is keen in this trade and the income of the practising real estate agents is dwindling since the downturn of the real estate market. To maintain a high ethical standard, with honesty as the foremost requirement, would mean that the practising real estate agents would have to incur a higher cost in providing the service.

Every rational person will try to optimise his time and resources. It would have thought that the cost for doing business for the real estate agents would be one of the key factors affecting the ethical standard of the trade, given due regard to the other side of the equation, namely, the income level achievable by the practising real estate agents.

Based on the above results, the Estate Agents Authority is recommended to promote itself to the public actively and widely through different media including TV, radio and press. It is also

important to ensure the practising estate agents are honest with their clients. Estate agents should behave honestly, together with upgrading their knowledge, information and training, in order to promote their professional image in the minds of their clients.

REFERENCES

Homepage of the Estate Agents Authority,
www.eaa.org.hk

Crockett, J.H. (1982), Competition and Efficiency in Transacting: The Case of Residential Real Estate Brokerage, *Journal of the American Real Estate and Economics Association*, 10(2), 209-227.

Johnson, L.L. and Loucks, C. (1986), The Effects of State Licensing Regulations on the Real Estate Brokerage Industry, *Journal of the American Real Estate and Urban Economics Association*, 14(4), 567-582.

Johnson, J.M., Nourse, H. and Day, E. (1988), Factors Related to the Selection of a Real Estate Agency or Agent, *Journal of the Real Estate Research*, 3(2), 109-118.

Schoeter, J.R., (1987), Competition and Value-of-Service Pricing in the Residential Real Estate Brokerage Market, *Quarterly Review of Economics and Business*, 27(1), 29-40.

Tse, R.Y.C. and Webb, J.R. (2002), The Effectiveness of a Web Strategy for Real Estate Brokerage, *Journal of the Real Estate Literature*, 10(1), 121-130.

Turnbull, G.K. (1996), Real Estate Brokers, Nonprice Competition and the Housing Market, *Journal of the American Real Estate and Urban Economics Association*, 24(3), 293-316.

Webb, J.R. (1988), The Assimilation of New Services into the Real Estate Brokerage Firm, *Journal of Real Estate Research*, 3(2), 165-75.

Webb, J. R. (2000), An Inquiry into the Professional Self Image of Real Estate Agents, *Journal of Real Estate Research*, 20, 153-177.

Zumpano, L.V., Elder, H.W. and Crellin, G.E. (1993), The Market for Residential Real Estate Brokerage Services: Costs of Production and Economics of Scale, *Journal of Real Estate Finance and Economics*, 6(3), 237-250.

1 ABOUT THE AUTHORS:

Dr Tse had been a Visiting Professor of Deakin University (Department of Architecture and Building) and Curtin University of Technology (Department of Property Studies), Australia, and is currently Professor of International City University of America. Dr Tse is also the Editor of *Journal of Construction Research* and has authored and co-authored six books, and published over 80 articles in international journals.

Mr K F Man is a member of the HKIS and currently works as a lecturer of the Hong Kong Polytechnic University.

Mr S M Chang is a lecturer of the Hong Kong Polytechnic University.

多謝你填寫此份問卷。本問卷旨在了解地產代理監管局及地產代理之形象，請用數分鐘回答下列各題：

1.地產代理監管局是一個：(請圈出正確答案)

A.公營機構 B.私人組織 C.法定團體

2.地產代理監管局能否處理有關佣金之投訴及糾紛？(請圈出正確答案)

A.能 B.不能

下列問題請圈出你心目中的答案

	十分同意			十分不同意			
3.地產代理監管局能有效地監管地產代理行業。	7	6	5	4	3	2	1
4.地產代理監管局能公平，公開地處理地產代理與客戶間之糾紛。	7	6	5	4	3	2	1
5.發牌後，地產代理比發牌前更專業。	7	6	5	4	3	2	1
6.發牌後，地產代理的服務水準比發牌前更好。	7	6	5	4	3	2	1
7.發牌後，物業交易比發牌前更公開。	7	6	5	4	3	2	1
8.發牌後，物業交易比發牌前更公平。	7	6	5	4	3	2	1
9.發牌後，物業交易比發牌前更誠實。	7	6	5	4	3	2	1
10.發牌後，你對地產代理更有信心。	7	6	5	4	3	2	1
11.發牌後，對買賣雙方更有保障。	7	6	5	4	3	2	1
12.地產代理監管局所制定的專業守則能使地產代理提供專業服務。	7	6	5	4	3	2	1
13.現時的發牌制度能有效地控制地產代理的質素。	7	6	5	4	3	2	1

14.你認為一個專業的代理，最低的學歷是：(請圈出答案)

A.小學程度 B.中五程度 C.中七程度 D.大專程度 E.大學程度或以上 F.其他_____

15.作為一個專業的地產代理，最重要的條件是：(請排列次序，1為最重要，6為最不重要)

_____ 擁有豐富的地產知識

_____ 掌握市場動態

_____ 有誠信

_____ 接受專業訓練

_____ 有良好表達能力

_____ 其他_____

其他資料

1.過去十二個月內，曾否透過地產代理進行地產買賣/租賃？(請圈出答案)

A.曾 B.否

2.你是否從事有關地產行業？(請圈出答案)

A.是 B.否

3.性別：A.男 B.女

4.年齡：

A.18-25 B.26-29 C.30-39 D.40-49 E.50-59 F.60歲或以上

5.學歷：

A.小學程度 B.中學程度 C.大專程度 D.大學程度或以上 E.其他

謝謝你寶貴的意見。

English version of Questionnaire on Professionalism of Estate Agent

1 Estate Agents Authority is:

- A. Public Company B. Private Association C. Statutory Body

2 Can Estate Agents Authority handle any complaints and arguments about commissions?

- A. Can B. Cannot

	Agree					Disagree	
3 Estate Agents Authority can monitor estate agents effectively.	7	6	5	4	3	2	1
4 Estate Agents Authority can handle the arguments between estate agents and customers openly and fairly.	7	6	5	4	3	2	1
5 After issuing licence, estate agent is more professional than before.	7	6	5	4	3	2	1
6 After issuing licence, the service of estate agent is better than before.	7	6	5	4	3	2	1
7 After issuing licence, property transaction is more open than before.	7	6	5	4	3	2	1
8 After issuing licence, property transaction is fairer than before.	7	6	5	4	3	2	1
9 After issuing licence, property transaction is more honest than before.	7	6	5	4	3	2	1
10 After issuing licence, you have confidence with estate agent.	7	6	5	4	3	2	1
11 After issuing licence, purchaser and vendor are under protected.	7	6	5	4	3	2	1
12 Practice Directions, which is prepared by Estate Agents Authority, can govern estate agents to provide professional service.	7	6	5	4	3	2	1
13 The current licensing system can control the quality of estate agent effectively.	7	6	5	4	3	2	1

14 You expect that the lowest education background of a professional estate agent should be:

- A. Primary education B. Form Five C. Form Seven
 D. College education E. University or above F. Others_____

15 The most important requirement to be a professional estate agent should be (order of ranking 1-6, 6 being most important and 1 being least important):

- _____ rich of real estate knowledge.
 _____ providing market information.
 _____ honest.
 _____ profession training.
 _____ excellent communication skill.
 _____ others. _____

Other Information

1 Do you have any property transaction through estate agents in the past twelve months?

- A. Yes B. No

2 Do you work in real estate field?

- A. Yes B. No

3 Sex: A. Male B. Female

4 Age:

- A. 18-25 B. 26-29 C. 30-39 D. 40-49 E. 50-59 F. 60 or above

5 Education:

- A. Primary education B. Secondary education C. College D. University E. Others_____



The Hong Kong Institute of Surveyors