

**An Independent Appraisal of the Buildings Department's
“Report on the Findings and Recommendations of the Working Group on
Review of Building Safety Enforcement Procedures and Practices”**

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11th May 2012

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Preface

Background

In the wake of the building collapse incident at 45J Ma Tau Wai Road on 29 January 2010, a Coroner's Inquest was held in August 2011 to look into the cause of death of 4 persons in the incident. In the same month, the Buildings Department (BD) gave an initial response to the Coroner's observation at a meeting of the Subcommittee on Building Safety and Related Issues of the Legislative Council Panel on Development, and made the commitment to conduct a comprehensive review on its internal building safety enforcement instructions, in light of the Coroner's findings and recommendations. The subsequent review by BD covered its building safety enforcement procedures and practices - including the internal guidelines on the inspection of buildings, its serving of statutory orders, and its subsequent monitoring of rectification actions.

A working group had been set up for this review, consisting of experienced professional staff from BD's two professional grades – building surveyor and structural engineer. The Working Group (WG) recorded the scope of the review, its findings and recommendations as a document entitled *Report on the Findings and Recommendations of the Working Group on Review of Building Safety Enforcement Procedures and Practices*, (hereafter referred to as *BD's Report*). BD had submitted this report to the Development Bureau.

The Appointment of Independent Experts by the Secretary for Development

Two independent experts were appointed by the Secretary for Development, Mrs Carrie Lam, to review *BD's Report*. The first was Mr Daniel Lam Chun, former President of the Hong Kong Institute of Surveyors and currently a non-executive director of the Urban Renewal Authority. The second one appointed was this reviewer, a structural engineer specializing in structural health monitoring systems.

The two independent experts were expected to bring their knowledge and experience in the fields of building surveying and structural engineering to bear upon *BD's Report*, so as to help the Government further enhance the effectiveness of its safety enforcement work related to buildings.

On completing this review exercise, this reviewer recorded his observations, findings and recommendations in the present document, *An Independent Appraisal of the Buildings Department's "Report on the Findings and Recommendations of the Working Group on Review of Building Safety Enforcement Procedures and Practices"*, (hereafter referred to as *Independent Appraisal*). Mr Daniel C. Lam prepared a separate document. The Development Bureau is to release the findings and recommendations in both documents to the public and the relevant committees of the Legislative Council as appropriate.

Chronology of Events

The following is the series of meetings and site visits which the two independent reviewers undertook in connection with this review exercise. A summary of the meetings held and the site visits is attached as Appendix.

Mr Ryan Chiu and Mr Justin To of the Development Bureau were present at the meetings, but not the site visits.

The many meetings also included those with the representatives of various professional institutions, as arranged by the Development Bureau. The purpose of these meetings was to collect the views and suggestions from colleagues working in the construction industry. The reviewers were particularly interested in tapping the wisdom from professionals working in related fields. The meetings, especially those with colleagues who had had direct experience on cases of building safety, were found to be highly useful.

- *9 January 2012:*

BD's Report on the Findings and recommendations of the Working Group on Review of Building Safety Enforcement Procedures and Practices was received via the Development Bureau.

- *19 January 2012:*

The WG elaborated on *BD's Report* and highlighted certain areas they thought as deserving particular attention. The purpose of this meeting was to facilitate the reviewers' better understanding of the Findings and Recommendations section in *BD's Report*.
- *15 February 2012:*

A meeting was held with the WG for the reviewers to further understand *BD's Report*, in particular its Findings and Recommendations, and the reasoning behind them. The meeting lasted 3.5 hours and was deemed very useful, as it enabled the reviewers to clarify some of the points made in *BD's Report*.
- *12 March 2012:*

A meeting was held with the representatives of the frontline professional staff of the Existing Building Division (EBD), so as to solicit their views on the building safety enforcement procedures and practices as according to their experience, and to inquire about the difficulties they might have encountered. The meeting lasted 3 hours. Again, it was found to be extremely useful as it was an occasion for the reviewers to have direct access to the views of the frontline staff, and their firsthand experience of difficulties at work.
- *21 March 2012:*

The reviewers went for site visits on two selected reported cases to gain firsthand experience of site inspection. Both cases were non-emergencies. It was not practical for BD to arrange the reviewers to be included in emergency cases since these usually call for immediate action. This notwithstanding, the reviewers still found the experience useful as the site visits enabled them to acquire firsthand knowledge of the work of frontline professionals during their site inspections on cases reported by the public. The interaction with the frontline colleagues during the site visits was also informative.
- *27 March 2012:*

A meeting with the President of HKIE was arranged to solicit his views on building safety enforcement procedures and practices, as well as his suggestions on their further improvements.

- *2 April 2012:*
A meeting with the representatives of HKIS was arranged to solicit their views on building safety enforcement procedures and practices as well as their suggestions on possible further improvements.
- *11 April 2012:*
A meeting with BD's Director and Deputy Director was arranged. This meeting had been initiated by the reviewers and was regarded as a courtesy visit before the completion of the exercise. The meeting was joined by the Chief Building Surveyor and the Chief Structural Engineer - the two most senior professionals in the WG. The reviewers took the opportunity to communicate briefly with the senior colleagues of BD on what had been observed and what were likely to be recommended. The reviewers also invited their comments on possible factual errors. The reviewers considered it a good meeting.
- *13 April 2012:*
A meeting with the representatives of HKIA was arranged to solicit their views on building safety enforcement procedures and practices as well as their suggestions on possible further improvements.
- *20 April 2012:*
On the request of the reviewers, a meeting was again arranged with the Chief Structural Engineer and the Chief Building Surveyor who was also the Co-chairman of the WG. Two more senior colleagues of BD joined the meeting. The purpose of this meeting was to further understand the "Management of Default Work Consultant and the Buildings Department Contractors" - an item only briefly mentioned in *BD's Report*. The meeting lasted 2 hours and was found to be informative and useful.

Acknowledgements

The reviewer is grateful to Mrs Carrie Lam, Secretary for Development, for the appointment as an independent expert in this review exercise of *BD's Report*. In preparing *Independent Appraisal*, the reviewer is deeply grateful to colleagues in the Buildings Department for their many forms of support and ready cooperation to facilitate the reviewers' undertaking. A sincere note of thanks

must also go to Mr Ryan Chiu and Mr Justin To of the Development Bureau for their unfailing assistance in innumerable practical matters, and in particular for coordinating all the meetings. The reviewer is indebted to the institutional representatives of HKIA, HKIE and HKIS for sharing their professional expertise and for their insightful comments. Last but not least, the reviewer wishes to note, with pleasure and gratitude, the good rapport with Mr Daniel C. Lam, his co-reviewer, whose viewpoints and observations have inspired many ideas.

Part A

Some Observations on *BD's Report*

Part A of *Independent Appraisal* will focus on some observations in respect of *BD's Report*. Part A follows the sequential order of the original document. The reviewer's observations are numbered; the sections and pages in *BD's Report* which the observations refer to are placed in parentheses.

Observation 1

(Refers to 'Purpose' on P. 1)

BD's Report is in response to the Coroner's recommendation in respect of the case of building collapse at 45J Ma Tau Wai Road. As a 'comprehensive review' which the BD undertook on its 'safety enforcement procedures and practices including the internal manual and guidelines on the inspection of buildings; issue of statutory investigation, repair and demolition orders; and the subsequent monitoring on the progress of follow-up actions', ***BD's Report nonetheless makes no mention at all as to whether there is an established mechanism in BD that the above documents and guidelines are reviewed and updated on a regular basis*** in light both of BD's latest experiences, and the emergence of new technologies which could be of assistance to BD's work. ('Regular' in this context means a systematic, proactive exercise undertaken at specified intervals; as versus one triggered by a particular event)

Observation 2

(Refers to Section 6 under 'Scope of the Review', on P. 2)

This section lists the 7 areas *BD's Report* focused on, (3 of which address the Coroner's observations). Whilst all 7 areas are pertinent to the duties and services of the BD, it is not adequately clear why they are chosen in light of the objective of *BD's Report*. *BD's Report* sets out to examine comprehensively the procedures and practices of building safety enforcement. There are various stages in the workflow from the time the complaint is received until the final compliance of the order(s), with each stage involving different issues. ***BD's Report does not explain why the 7 areas are especially worthy of reviewing, in terms of their significance in***

the quality improvement in BD's services – this being the objective of *BD's Report* in the first place.

Observation 3

(Refers to Section 8, under 'Enforcement of Building Safety under Buildings Ordinance', on P. 3)

A pertinent issue in respect of the 6 geographical sections of EBD concerns their manpower resources – both in terms of the number of staff in each section, and whether this staffing level has been reviewed to be sufficient to measure up to EBD's time pledges. This issue is not mentioned in *BD's Report*. BD governs the private buildings in Hong Kong and therefore faces the public in its duties. **In light of what the public expects of BD's performance, an analysis of its manpower level is necessary.**

Observation 4

(Refers to Section 11, under 'Enforcement of Building Safety under Buildings Ordinance', on P. 4)

This section in *BD's Report* contains 2 observations which are both correct:

- (1) It is beyond dispute that it is the owners' responsibilities to carry out regular inspections and timely maintenance of their buildings, so as to upkeep the safety of the buildings. To this purpose, the role of BD is indispensable.
- (2) It is BD's inspections of reported cases, its assessments of the seriousness of the defects and dilapidations which clarify for the owners what kinds of repairs are called for, and how urgent they are.

This in fact harks back to **the whole point of *BD's Report*, which is to see how building safety enforcement procedures and practices might be improved. It is this issue which *BD's Report* should focus on, rather than the owners' responsibilities.**

Observation 5

(Refers to Section 13 (I)(b)(ii) & (iii), under `Findings and Recommendations`, on P. 6)

These 2 paragraphs in *BD's Report* refer to 2 recommendations regarding the tools/equipment for the purpose of site inspections: Both the provision of a standard tool kit and the establishment of a centralized body in BD to be responsible for recording the inventory, upkeeping, procuring and replacement of tool/equipment are improvements, if neither of them had previously been in place.

- However, **it is not mentioned** under this heading **if the tools/equipment in current use are regularly reviewed and updated** to ensure their adequacy for BD's duties and services, and **whether the introduction of more advanced tools/equipment has been considered to assist in the quantification of measurement parameters.**
- Neither is it mentioned if BD has considered the **introduction of equipment with Internet capabilities for remote monitoring.**

Observation 6

(Refers to Section 13 (I)(c), under `Findings and Recommendations`, on pp. 6-7)

All the recommendations in (i), (iii), (iv), (v) under `Technical Assessment and reporting` represent important improvements on present provisions.

- (i) Clear **guidelines** are definitely necessary when circumstances require the opening up of concealed critical structural elements, and decorative materials for the further inspection of individual units. It would be much more difficult for EBD's staff to assess the overall structural integrity of defective buildings without clear guidelines.
- (ii) Unless the case is obviously minor in nature, **pre-inspection desk study** on the structural form of the building, the details of key elements, construction material and history of building modification is important in order to gain a comprehensive understanding of a building's structure. Focused examinations during site inspections would not be possible on the basis of piecemeal understanding.

- (iii) The introduction of a **new category “V - Severe”** is a good move, and will be of great value in the diagnosis of seriously dilapidated structural conditions which call for emergency works by the Buildings Department’s Contractor (BDC), the issue of closure orders, and of demolition orders.

The efforts to set up definitive criteria for Category ‘V – severe’ must be applauded, for making current guidelines more sufficient. However, **the difficulties involved in grading where precisely a condition belongs must not be underestimated**, for the descriptions in Categories III through V will form a continuum, rather than pertain to features clearly distinguishable from one another.

- (iv) The recommendation for a **procedural audit** of the inspection reports by the Internal Audit Unit of BD is also a good move, as it is important to check if members of frontline staff have followed the guidelines laid down in handbooks and manuals.

However, there is nothing mentioned in respect of **quality audit**; this is different from procedural audit but just as important. It is necessary to ensure that inspection officers have been correct in their assessments, as errors in judgments are potentially disastrous.

Procedural auditing needs to be complimented by quality assurance for the provisions to be more sufficient.

Observation 7

(Refers to Section 13 (II)(b), under ‘Findings and Recommendations’, on p. 8)

As this section points out, inspecting officers are ‘personally responsible for their duties’. It is easy to imagine the pressure in their duties, esp. with cases involving more serious damages, in light of the potential consequences of their initial wrong decisions. Although all the inspecting officers are qualified professionals and no doubt competent for their duties, it must be noted that the assessments of defective buildings call for **highly specialized experience** as the cases are unique, complex and much more difficult to describe and model than new buildings. **It is not**

mentioned in *BD's Report* that BD has a policy for staff training and the formal sharing of practical experience.

Observation 8

(Refers to Section 13 (II)(c), under 'Findings and Recommendations', on p. 8)

In respect of the building collapse incident at 45J Ma Tau Wai Road, the Coroner had made the recommendation that cases of building dilapidation be inspected jointly by a Building Surveyor (BS) and a Structural Engineer (SE). The WG, however, suggests maintaining the current system. **Whilst the WG's observation that joint inspection 'in every case is not necessary', the observation also implies that it is necessary in some cases.** Bearing in mind that the Coroner only had as his frame of reference the Ma Tau Wai disaster, and the fact that of the many cases BD received annually, some had been cases of genuine emergencies, **it appears more sensible to set up clear guidelines for differentiating cases which do call for joint inspection from those which do not.** Such guidelines will not be counter-efficient in terms of human resources and have no adverse implications for the professional competence of BD's staff.

Observation 9

(Refers to Section 13 (III) (a) under 'Findings and Recommendations', on p.8)

The recommendation to correlate 'Severity Indices' and 'Classification of overall dilapidated condition of the building' with structural consultation is a good move. However, several related issues must be noted:

- **Categories III to V**, although useful as indicators, **do not form 3 groups of clearly demarcated, distinct features but rather a continuous spectrum.** This was mentioned above in Observation 6.
- Indicators are operated by people. It is the inspecting officer who grades whether a defect slides closer to III or to V. In general, it is easier to assess the condition of individual elements, but much more complicated to diagnose the overall condition. (As is often the case, individual elements may belong to Severity Index 3, but the overall condition qualifies for

Category IV.) It takes a lot of experience with dilapidated buildings to appreciate finer differences.

- Since precision of judgment depends on the inspecting officer, **the nurturing of staff is of paramount importance.**

Observation 10

(Refers to Section 13 (IV), under 'Findings and Recommendations', on p. 9)

The 2 paragraphs are in response to the Coroner's recommendation that a repair order be issued at once instead of first issuing an advisory letter 'if the building is considered as dangerous or liable to become dangerous after inspection'. The WG, however, thinks that the issue of advisory letters should be maintained. It is important to note here that the Coroner was not speaking in general terms but had in mind buildings which were clearly in danger, like the one at 45J Ma Tau Wai Road. As such, the **WG's recommendation represents a misreading of the Coroner's advice.** While it is true, as the WG points out, that advisory letters do not prejudice the repair programme, **in cases of clearly dangerous buildings, advisory letters can be misleading as they carry no statutory action and thus mask the urgency of certain situations,** (not to mention that advisory letters are frequently ignored by the recipients).

Observation 11

(Refers to Section 13 (V)(b), under 'Findings and Recommendations', on p. 10)

With regard to statutory orders, it is queried why it normally takes 3 months for cases of non-emergency. Given that the inspection report has already been completed **the recommended timeframe benefits neither the public nor EBD itself:**

- From the perspective of the public, even non-emergencies – like water leakage incidents - are highly irritating if people need to wait 3 months for the problems to be attended to. (In real terms 4 months if the 1 month allowed for the submission of the inspection reports is also taken into account.)

To a considerable extent, the public's perception of BD depends on the efficiency of BD's services. If, however, what is perceived to be a lack of sufficient efficiency on BD's part originated from a shortage in manpower and/or other resources, then this issue must be addressed. On the basis of its experience over the years, it must be possible for BD to calculate the many variables involved in attending to a case. Adjustments could then be made to shorten the time in serving orders. This will both minimize the risks to the public and improve BD's ability to live up to the public's expectations.

- The reviewer understands that BD has a heavy workload. On account of competing job priorities EBD may not always be able to serve orders as quickly as it might have wished. However, from the perspective of cost-effectiveness in EBD's workflow, it is observed that **capping the time allowance for serving orders at 3 months is actually counter-productive**. Senior Professional Officers who serve the orders have no firsthand knowledge of the cases in question; if frontline inspecting officers who originally handled the cases are required to supply details for clarification purposes, it is also reasonable to assume their recollections of the cases to have somewhat faded in the course of a few months. Would it not be more productive if the whole process for serving orders be speeded up by reducing the time allowance?

Observation 12

(Refers to Section 13 (V)(c), under 'Findings and Recommendations', on p. 10)

The introduction of a **new category 'V – Severe'** in Table 5 of the *Manual for Inspection, Assessment and Repair of Buildings* is a **good move**. But since Category V will be a division from the current Category IV, **clear guidelines must be established** to demarcate when a seriously dilapidated condition calls for urgent action, such as emergency works by BDC, the issue of a closure order, an evacuation order, or a demolition order.

Observation 13

(Refers to Section 13 (VI)(a)(ii), under `Findings and Recommendations`, on p. 10)

In light of the previous absence of guidelines for the timeline of inspection report submission, **the recommendation in this paragraph that reports be submitted within 1 month after inspection is definitely a good move**. It will make BD's procedural guidelines more sufficient.

Moreover, if evacuation orders in respect of highly dangerous buildings are to be served at once after inspection, without having to wait for any reports on the case, this provision should be clearly stated in black and white.

The other recommendation in this section **concerning the re-inspection cycle is also a good move**. It must be noted that there **must be clear guidelines for the rationale** of re-inspection intervals.

Observation 14

(Refers to Section 13 (VI)(a)(iii), under `Findings and Recommendations`, on p. 10)

With respect to the re-inspection cycle, since it is to be monitored by a BU (Bring-up) system implemented in the office to ensure that it is suitably followed, it is observed that **remote monitoring facilities with Internet capabilities** will be useful; these will **give better safeguard within the re-inspection cycle** since the figures will be constantly kept under watch. Moreover, remote monitoring also implies **more efficient use of manpower resources**.

Observation 15

(Refers to Section 13 (VI)(b), under `Findings and Recommendations`, on p. 11)

Given the current absence of clear bodies responsible for the **`outstanding orders`** and **`long outstanding orders`**, the recommendation that these two types of orders **will be monitored by 2 bodies**, respectively chaired by the Sectional Chief Professional Office and the Director of Buildings, **are good moves**. However, since there must be underlying reasons why statutory orders could have been ignored for such a long time for them to become **`outstanding`** and even

`long-outstanding', **it should be of help to the bodies concerned if some clear-cut principles are established on how to address the issues.** Could it be possible that the resolution requires inter-departmental cooperation? Effective handling of the issues requires guidelines for specific situations, and goes beyond mere monitoring of the cases.

Observation 16

(Refers to Section 16 (a), under `Concluding Remarks', on p. 12)

This section re-states the WG's earlier recommendation regarding the infeasibility and impracticability of joint inspection `in every case', and asserts the effectiveness of BD's current mechanism for cross-discipline consultation. However, as pointed out earlier, the phrasing in Section (II) (c) carries an implicit acknowledgement that joint inspection may be necessary in certain cases. Given also that the Coroner only had as his frame of reference a building which actually tumbled down when he recommended joint inspection, **it seems more reasonable to focus attention on cases which would benefit from double expertise during inspection, rather than to insist on the adequacy of cross-consultation, and thereby rules out all cases for joint inspection.**

Observation 17

(Refers to Section 16 (b), under `Concluding Remarks', on p. 12)

This section re-states the WG's earlier recommendation that the current practice regarding advisory letters be maintained. This indeed **represents a wrong understanding of the Coroner's observation.** As earlier noted in respect of Section 13 (IV) (a) & (b), the Coroner was specifically referring to highly dangerous buildings which called for immediate action, as such, advisory letters would be misleading as the recipients might likely fail to appreciate the seriousness of the situations. The Coroner's observation was judicious.

Observation 18

(Refers to Section 16 (c), under 'Concluding Remarks', on pp. 12-13)

The concluding remark here regarding regular inspection of rectification works seems to involve a **misunderstanding of the Coroner's original recommendation**. It is unlikely that the Coroner would disagree with the WG that the re-inspection cycle should be assessed 'on a case by case basis', for all that the Coroner put forward was a suggestion for 'regular inspection, say, every two weeks'.

Observation 19

(Refers to Sections 17 & 18, under 'Concluding Remarks', on p. 13)

In these 2 sections the WG recapitulates BD's main areas of duties in helping owners of buildings to safeguard their properties. That owners have the primary responsibility for their properties is clearly laid down in the Building Ordinance. It would indeed be, as the WG points out, 'illogical in shedding the duty of investigation of dilapidated buildings to the government at the expense of the public purse'; however, there has never been any suggestions to this effect. As such, **the emphasis of the two paragraphs is misplaced; while the paragraphs themselves are out of place in a report the objective of which is to study how BD might improve building safety through a comprehensive review of its procedures and practices**. 17 and 18, as concluding remarks, are not in alignment with the aim of the project.

Part B

Discussions, Recommendations and Concluding Remarks

Delimiting the Backdrop for the Reviewer's Recommendations

The recommendations and concluding remarks made in Part B of *Independent Appraisal* are based on the following:

- The reviewer's understanding of the exercise of BD's Report: which is to review building safety enforcement procedures and practices, with a focus on the inspection of, and enforcement actions on defective, dilapidated or dangerous buildings. The reviewer's recommendations will not deviate from this focus.
- The content of *BD's Report*, and information from selected sections of the *Appendix to BD's Report*.
- Additional information derived from discussion sessions with the WG, and separate discussions sessions with BD's frontline staff.
- 2 site visits with BD's inspecting officers, one a SE, and the other a BS.
- Meetings with various professional bodies.
- Information from related newspaper clippings.

Discussions and Recommendations

1. Reference Documents for BD's Inspecting Officers

Inspecting officers refer to the following in-house guidelines in their duties:

- *Buildings Department Emergency Handbook*
- *Existing Building Division (EBD) Manual*
- *Contract Management Unit (CMU) Manual*

The reviewer would like to raise two issues regarding these guidelines:

1.1 *The precision of the descriptions in the guidelines for structural health conditions*

Highly experienced frontline officers may have long graduated from the reliance on the various guidelines; this may not be the case with those who are new to the duties. As such, the precision of the verbal descriptions in the guidelines is of paramount importance. Precision, however, is not always possible, since the **structural health conditions of defective / dilapidated buildings are difficult to describe**. As pointed out in Part A of this *Independent Appraisal*, different degrees of dilapidation constitute a continuous spectrum rather than take the form of distinct features. Take for instance these descriptions from Table 3 in the *Manual for Inspection, Assessment and Repair of Buildings*, which classifies the overall dilapidated condition of a building's exterior:

- 'Significant defects' which are 'many but localized' belong to Category III – Varied.
- 'Widespread defects' which are 'numerous, widespread and extensive' belong to Category IV – Poor.

Consider also this pair from Table 4, which classifies the overall dilapidated condition of a building's interior common areas and internal units:

- 'Rust stains & exposed reinforcement' (Category III – Varied)
- 'Rust stain & severe exposed reinforcement' (Category IV – Poor)

The differences are qualitative, and their descriptions do not refer to discrete categories. As such, inspecting officers new to their duties and confronted with more serious cases might feel a lot of pressure in deciding whether a damaged feature belongs to Category III (in which case no alarm needs to be raised and repair can take 6 months to complete), or to Category IV (which necessitates immediate alarm, and involves urgent and radical follow-up actions).

As verbal descriptions per se are often ambiguous, it is recommended that entries in the written guidelines be enriched by site photographs from past cases to indicate what exactly is meant by a certain degree of damage. The reviewer specifically thinks it would be useful if a database be built using IT technologies. **Photographs and other relevant information stored in this manner are readily retrievable for**

reference purposes; they can also be updated very conveniently.

1.2 *Regular reviews of the guidelines*

1.2.1 To begin with, *BD's Report* does not mention whether there is an established policy in BD that the above documents and guidelines are regularly reviewed, and accordingly updated in light both of BD's latest experiences, and the emergence of new technologies which could be of assistance to inspection work.

Regular reviews are deemed necessary to keep step with constant changes in external circumstances. For instance, the number of ageing buildings is on rise, their problems continue to multiply. **Regular reviews and updating of existing provisions are part and parcel of the present day emphasis on quality assurance.**

1.2.2 Then, even assuming that BD does have provisions for reviewing and updating on a regular basis its in-house guidelines, it is also not clear whether in the process of so doing the opinions of the relevant parties have been solicited and taken on board. The reviewer is of the opinion that **feedback from EBD's inspecting officers and outsourced colleagues with firsthand experience of the problems during inspection should form the basis of the reviews.** As related by some frontline colleagues, the hurdles they encountered during inspection were many and frequent; for instance, property owners refused to consent to the removal of decorative components (like wallpaper) for the inspection of concealed elements.

There is no mention in *BD's Report* if BD has invited its frontline colleagues to formally report their hurdles at work. As such, it is unclear if BD is fully cognizant of their difficulties.

If and when BD reviews its in-house guidelines, it is recommended that it first solicits and takes on board the views of its frontline colleagues. All hurdles which impede investigation should be given timely reviews so that they could be duly overcome - if necessary, through policy changes and legislation.

2. Facets of BD's Current Mechanism

2.1 *EBD's staff composition*

Existing private buildings are governed by EBD and Mandatory Building Inspection Division (MBID). EBD has 6 geographical sections and MBID has 2 sections. In terms of staff composition, **each section is homogeneous in that it is comprised of only BS or SE.**

Through meetings with BD colleagues, the reviewer understands that the practice had been around for a very long time, and that members of staff have not found it particularly inconvenient, since BD has an established mechanism for cross-discipline consultation; as such, cross-discipline advice is always available.

However, the reviewer sees no merit in this composition logic. **It is problematic as the territory sub-division which each EBD section serves requires both BS and SE expertise.** Although cross-discipline is available when needed, it is given in the spirit of mutual assistance, and cannot be as convenient and fully functional as having both disciplines in the same team.

In a meeting with institutional representatives, the reviewer learnt that there are structural issues in the unauthorized sub-divisions in urban tenements. The importance of having double expertise in BD's inspection work thus cannot be over-emphasized - in light of the fact that unauthorized sub-divisions are precisely one of BD's current preoccupations.

Organizational restructuring is a monumental issue. The reviewer is aware of the inherent difficulties in such an undertaking, and that it takes time. However, the reviewer cannot

emphasize enough that **BS and SE are complimentary in discharging their duties**. The reviewer therefore still recommends **BD to consider having both disciplines in the same team**.

Joint consultation, though a viable arrangement, **lacks the synergy when the 2 groups work in tandem in the same section, on a day-to-day basis**.

2.2 *Some current provisions and proposed improvements in BD's Report*

BD's Report has recommended improvements to existing provisions in the following areas:

- The introduction of a **new category - category 'V-Severe'** in Tables 3 and 4 of *Manual for Inspection, Assessment and Repair of buildings* to reflect serious dilapidated building conditions.
- **Pre-inspection desk study** on the structural form of a building, details of critical elements, materials of construction and history of modifications.
- **Procedural audit** of inspection reports

All these recommendations are good moves. The reviewer recommends the **addition of quality audit** (quality assurance) for inspection reports, which is not the same as procedural audit. This should be conducted by the supervisor to ensure that the assessments made by frontline staff have been correct. Quality audit is deemed necessary on 2 counts:

- The judgment that a structure's degree of dilapidation is III, or IV, has radically different implications for subsequent follow-up actions. While the competence of individual frontline staff is not to be doubted, the EBD section concerned must recognize its responsibility as a team in discharging services of good quality, especially since errors of judgment can be potentially disastrous.
- It enhances the confidence of inspecting officers relatively new to the duties, and also accelerates their learning process if their judgments are endorsed by their supervisors as appropriate.

In a meeting with the WG, the reviewer was told that the practice of quality assurance exists in BD. However, there is no indication of formalized provisions to this effect. It is therefore recommended that **quality assurance be built into the system in the form of a written document.**

Procedural auditing needs to be complimented by quality assurance for the provisions to be more sufficient.

2.3 The development of frontline staff

BD's frontline staff have very demanding jobs. *BD's Report* does not mention whether BD has a system of development for its frontline staff. In fact, there is no indication that BD has an established policy, in the form of a written document, to this end.

Section 13 (II) (b) in *BD's Report* mentions that the inspecting officers are 'personally responsible for their duties'. The pressure on them is thus not difficult to imagine, in light of the potential consequences should their assessments be wrong. All the inspecting officers are of course qualified professionals whose competence is not to be doubted, but it must be noted that **dilapidated buildings present cases which are unique, complex, and much more difficult to describe and model than new buildings. Defective/dilapidated structures call for specialized experiences which go beyond good fundamentals.**

The reviewer considers **the training for frontline staff to be of utmost importance, especially for those who newly join the service.** Frontline staff also concurred with this viewpoint during a discussion with the reviewer. They had found it very helpful, when they first joined the service, if there was the opportunity to go for site inspections with more experienced colleagues. The problem with training given this way is in its ad hoc nature, and the fact that it is entirely up to the goodwill of individuals who understand the difficulties of new comers and are willing to share their experience. Frontline professionals welcomed the suggestion for more formalized sessions of experience sharing.

It is therefore recommended that **colleagues who newly join the service be required to attend an in-service training programme of a specified duration**, and thereafter be required to **attend on a continuing basis sessions of experience sharing** (seminars and workshops which pertain to significant and instructive cases in BD).

2.4 *Equipment for inspection and monitoring*

Section 7 of *BD's Report* states that the WG has reviewed the need for introducing equipment to assist frontline staff in their visual inspections. However, there is little follow-up in the rest of *BD's Report* on this issue. In fact, there is no mention whether the tools/equipment currently in use are adequate for site inspections, and whether they are regularly reviewed and updated as necessary. The reviewer would like to raise two issues in respect of equipment:

2.4.1 *The use of more advanced and sophisticated equipment*

With the advances in technology, new and more sophisticated facilities can greatly improve the precision in the detection of defects, especially defects which are less visible to the human eye, or are concealed by decorative components. More sophisticated equipment also facilitates the monitoring of possible propagations of dilapidation and deformations. It is recommended that **more advanced equipment be brought into service to supplement human judgment on grading the damages, especially in cases of dangerous buildings under critical conditions.**

Sophisticated equipment are, of course, costly. The reviewer agrees with institutional representatives that the handling of such equipment also presupposes certain expertise. Given that such sophisticated equipment are not required in all the cases EBD handles, it would be neither practical nor viable to suggest that equipment of such quality become staples in EBD's everyday operations, or for all the frontline professionals to acquire the knowledge for their operation.

As an alternative, the reviewer recommends

- **the setting up of a task force within EBD whose members are acquainted with the more sophisticated equipment**, and who are moreover capable of analyzing the data through their application.
- It is further suggested that **external advisers from the industry and/or academic institutions be incorporated into this task force** to enable the timely transfer of advanced knowledge from various sources.

2.4.2 *Remote monitoring*

Facilities with sensory system operating through Internet are especially useful for remote monitoring. Such facilities can greatly enhance efficiency as they transmit signals from the site to BD's control office, to alert the staff at once of any changes in the reading, but without involving BD personnel in additional site visits.

BD's Report has recommended setting up **re-inspection cycles**; remote monitoring will also be useful in this regard. Repair orders are usually allowed 6 months for compliance, in cases involving more serious defects, **remote monitoring can safeguard against possible rapid deterioration during this relatively lengthy period, under some special circumstances.**

In the likelihood of more cases coming the way of BD - on account of the rising number of ageing buildings, and the possible impact on buildings in the vicinity of MTR extension construction sites – remote monitoring has implications for both the efficient deployment of resources and the reduction of risks.

It is highly recommended that **BD includes remote monitoring as part of its provisions. BD can screen their cases to determine those which call for closer monitoring, and set up guidelines for the application of such facilities.**

2.5 *Manpower resources*

At various stages in EBD's workflow, there are time pledges for the completion of specific tasks. *BD's Report*, however, makes no reference to whether the current staffing

level is adequate to support high quality building safety control services which the public expects of BD. An analysis of EBD's manpower level is necessary, in light of its rising workload, specifically now that the clearance of unauthorized constructions in the New Territories, and the clearance of unauthorized sub-divisions in urban tenements also fall within EBD's domain.

It is recommended that **BD addresses the issue of manpower resources**. A review should be conducted to see if the present staffing level in EBD's 6 geographical sections can measure up to EBD's time pledge, taking into consideration the rising number of ageing private buildings in Hong Kong, and what the public expects of BD's services. In *BD's Report*, Section 13 (VI) (a) (i) mentions that EBD takes up to 10 days to attend to cases of non-emergencies as reported by the public; while Section (V) (b) mentions that it takes EBD up to 3 months to issue statutory orders for such cases. It is not improbable that queries be raised as to why it should take up to 10 days to initiate inspection after a complaint has been lodged, and up to 3 months to serve statutory orders, (even if such cases are non-emergencies). **An analysis of EBD's manpower level obviously has a crucial role in its performance pledges.**

EBD will have a better idea of whether its time pledges are reasonable if it has in place the practice of benchmarking EBD's performance indicators against those of similar organisations in other cities, like Tokyo, Taiwan or Singapore. Benchmarking will be an objective criterion to help EBD ascertain if its current performance level is acceptable ; this in turn would enable EBD to further determine whether it might be necessary and/or viable to have its human and budgetary resources readjusted.

During a discussion session, EBD's frontline staff confirmed the reviewer's observation of **possible staff shortage**.

- They confirmed the rising number of cases and acknowledged the impossibility of attending to all of them as speedily as they would have wished to. This in turn entailed strings of complaints from the public, most of these via the telephone.

- The manpower shortfall has another manifestation: EBD's professional staff members often find themselves having to take on a variety of duties which falls outside of their expertise - like clerical desk work and answering calls of complaints - at the expense of the time and attention to their proper duties.

There appears to be a **misallocation of human resources** in EBD. The reviewer would not underestimate its seriousness, in the context of the EBD's expected performance. It is therefore recommended that **BD reviews its manpower level, as well as its allocation of human resources so as to gauge their appropriateness in light of the public's expectations.**

3. The Coroner's Recommendations

At the Coroner's Inquest in August 2011 in regard of the Ma Tau Wai disaster, the Coroner delivered a number of observations:

1. Joint inspection by BS and SE.
2. The immediate issue of repair orders instead of issuing advisory letters first for dangerous or potentially dangerous buildings.
3. Close monitoring of the progress of rectification works.

BD's Report agrees with the Coroner's recommendations only to a limited extent. It has responded positively to item (3), in respect of the close monitoring of rectification works, but maintains that joint inspection 'in every case' is not necessary, feasible, or practical for item (1). Likewise, for item (2), *BD's Report* suggests maintaining the issuing of advisory letters prior to repair orders.

The reviewer has pointed out in Part A of this *Independent Appraisal* that the WG's responses in *BD's Report* **have failed to address correctly the Coroner's recommendation**. Whereas the Coroner had used as his frame of reference the Ma Tau Wai disaster and cases of comparable magnitude when he made his recommendations, the WG responded by generalizing about all the cases EBD handles, and concluded *BD's Report* by

placing the responsibility for building maintenance and repair on the property owners. **The overall impression was thus one of defensiveness.** The reviewer deemed this worrying, since **this attitude and *BD's Report* itself would definitely not be viewed favourably by the public.**

After talking with the frontline staff, however, the reviewer was better able to understand the origin of this defensiveness: It can be seen as having arisen, at least in part, from the problem of staff shortage and misallocation of human resources mentioned above. Frontline staff are not productive doing jobs irrelevant to their expertise, like handling calls of complaints. It was all the more frustrating when these chores took away time for their proper duties, causing further work delays. As a department which deals with private buildings, BD inevitably interacts a lot with the general public, many of which members tend to see things only from their perspectives, and who are not always polite in their language; neither are they always reasonable in their demands, at times they even abuse the system. This may explain the unmistakable defensiveness detected in various parts of *BD's Report*, and which is especially pronounced in its conclusion.

The reviewer is of the opinion that **the Coroner's observation was judicious, and therefore should be duly heeded. It would be more sensible if proper guidelines are established for both items (1) and (2) so that**

- **for (1), cases which require joint inspection could be differentiated from those which do not, and**
- **for (2), cases for which advisory letters are still appropriate could be differentiated from those which require immediate and radical follow-up actions.**

4. Addressing an Underlying Issue

The reviewer is aware that the above discussion on BD's human resources shortfall and misallocation may not appear directly relevant to the objective of this exercise, which is to review BD's safety enforcement procedures and practices. **Yet, procedures and practices**

are operated by people; hence staff members' attitude towards work inevitably impacts on the quality of their performance. From talking with frontline inspecting officers, the reviewer got the distinct impression that part of frustrations have come from having to deal with members of the public who are unaware of their own responsibilities and instead place the blame on BD when problems arise with their properties.

As the reviewer perceives it, because of the misallocation of human resources, EBD's professional staff are often caught in conflicting roles: In handling complaints from the public, they should, in principle, see problems from the victims' perspectives; this, however, clashes with their role as enforcers of the law. **Over time, the effect is an erosion of morale,** despite the earnest wish to perform their duties with passion.

In noting the nature of some underlying problems in BD's mechanism, the reviewer recommends an overhaul along the following interrelated considerations:

- **BD should promote a corporate culture with an emphasis on a client-centred mindset.** The spirit of community service is a requisite for all civil servants, and especially so for the staff in the building safety control services, as human lives are at stake.
- To alleviate the frustrations felt by the frontline professionals, EBD should streamline its human resources so as not to overload its frontline staff. It is recommended that EBD introduces into its mechanism a public relation component. (A case for reference is the Hong Kong Police Force, which has a Police Public Relations Branch.) For EBD, this public relation component can be built into each of its 6 geographical sections, in the form of **a small group of staff trained in the skills of communicating with the public and familiar with the affairs of individuals geographical sections, whose duties are to provide information to the public, explain queries, and to collaborate with other government departments as circumstances dictate. The problems they handle are neither technical nor professional, and precisely on this account professional staff can be left to focus on technical and professional issues.** A public relation component in EBD will

lubricate its relationship with the general public and thus improves BD's corporate image.

- Since there is no denying that the basic responsibility for building maintenance resides with the owners - a fact many of them fail to appreciate - **BD might consider launching publicity campaigns to educate the public.** The current Mandatory Building Inspection Scheme is a move in the right direction, as it carries inherent educational value for the general public.

However, it may not be appropriate for all such initiatives to proceed exclusively from BD, since the general public might then perceive the Government as having vested interests. It is therefore recommended that **related professional bodies and possibly also District Councils be invited to participate in such Government initiatives.** In echoing BD's message, these external bodies will help forestall the possible perception that the Government shirks its responsibilities.

Concluding Remarks

1. The WG has proposed some improvements in *BD's Report* for enhancing BD's building safety enforcement procedures and practices. There is also no doubt that the newly introduced Mandatory Building Inspection Scheme will, in the future, further improve BD's building safety control services to the public.
2. To ensure BD's provision of quality building safety control services, it is recommended that a policy be formally established for the regular and systematic review of the building safety enforcement system - including its procedures and practices, as well as its associated documents and facilities. Such reviews must be pragmatic in their approach and use as their bases the views of, and feedback from parties relevant to BD's duties and services, esp. its frontline colleagues.
3. It is recommended that a policy be formally established for the training and development of professional/technical staff on a formal and continuing basis, both to strengthen their

competence in handling critical cases amongst dangerous buildings, and to enhance their passion in serving the public.

4. It is recommended that the staff composition of the EBD sections be reviewed, to ensure that the BE and SE expertise is better synergized through organizational restructuring.

It is also recommended that a small group in each EBD section be established for handling non-professional/non-technical matters, to ensure that the professional staff would have enough time to discharge their duties more effectively.

5. It is advisable for BD to consider reviewing the adequacy of its manpower resources provisions in EBD, to ensure that the quality of building safety control services provided can reasonably meet the public's expectation.
6. It is advisable for BD to work collaboratively with relevant professional institutions and District Councils to launch educational campaigns for promoting building safety awareness to the public.
7. It is observed that the Coroner's recommendations at the Inquest have been judicious. Although the reviewer can understand some of the reasons which might have led to the defensiveness in the *BD's Report*, it is recommended that the Coroner's recommendations be taken in a more positive manner, so that the spirit of the recommendations could be incorporated in BD's proposed improvements.
8. As the whole review exercise draws to a close, the many proposed improvements both in *BD's Report* and the reviewer's *Independent Appraisal* (if approved), are yet to be implemented. The overhaul exercise will call for plenty of efforts and resources. It is recommended that enough resources be given to BD for putting the proposals into effect. It is noted in particular that BD's numerous Handbooks and Manuals for its staff are in urgent need of being revised and updated, the reviewer therefore strongly advises for

prompt attention to these documents, so that the proposed improvements will be properly incorporated into them.

At the formal completion of this review exercise, the reviewer would like to advise that it should be looked upon more as a basis for future reviews, and less as a one-off exercise merely to have new measures implemented. All improvements are relative, since they are inevitably subject to ever-changing circumstances and therefore have a built-in necessity for evolution, adjustments, and fine-tuning. It is unlikely that future cases will be exact replicas of old ones.

As such, a review exercise is only truly meaningful if the new system's efficacy is closely monitored - not only to determine the adjustments needed when the new measures are applied on real life situations, but also to lay the groundwork for further reviews and improvements. Test running the new system on selected cases previously handled by BD - for instance, the Ma Tau Wai incident - and collating the resultant data will yield valuable insights. (The cases themselves need not be identified since it is their component problems which are useful.) Drawing on the lessons learned from the past, such simulations will ascertain the new system's degree of effectiveness. Then, by throwing light on how things might have been had different approaches been adopted, the simulations are also instructive for current situations.

More important, the data from the simulations and from present day cases using the new system - if carefully monitored - will form a meaningful part of the follow-up to the review exercise. This is, after all, an overriding function of such an exercise.

Signed by:



Date:

11-May-2012

Ir Prof. Ko Jan-ming

BSc(Eng), PhD, CEng, FStructE, FASCE, FHKIE, FHKEng,
RPE

Independent Review on the Operations of the Buildings Department

Summary of Meetings Held (as of 20 April 2012)

Date	From	To	Meeting	Attendees
19 Jan	1000	1230	Briefing Session on WG's Report	<u>DEVB</u> Mr Ryan CHIU PAS(PL)3 Mr Justin TO AS(B)2 <u>BD</u> Mr Paul PANG Tat-choi AD/EB1 Mrs HUI Ming-fong CSE/C; Co-chairman of WG Mr AU Wing-hung CBS/D; Co-chairman of WG Mr TANG Kwok-kuen SSE/C1; Member of WG
15 Feb	1430	1830	Meeting with the BD's WG	<u>DEVB</u> Mr Ryan CHIU PAS(PL)3 <u>WG of BD</u> Mrs HUI Ming-fong CSE/C; Co-chairman of WG Mr TANG Kwok-kuen SSE/C1; Member of WG

				Mr TSANG Po-king	SBS/D2; Member of WG
				Mr Edwin HONG	BS/D2-2; Member of WG
				Mr LUK Man-kit	SE/C5-1; Secretary to WG
12 Mar	1430	1830	Meeting with Staff of the BD	<u>DEVB</u>	
				Mr Ryan CHIU	PAS(PL)3
				<u>BD</u>	
				Mr CHEUNG Wai-ping	BS/A1-2
				Mr YAN Tik-pang	BS/A4-3
				Mr CHEUNG Hiu-wai	BS/B1-2
				Mr CHUNG Hung-yu, Rex	BS/B4-1
				Mr LAI Man-tai	SE/C3-1
				Mr CHAN Chun-kong	SE/C4-1
				Mr U Man-yiu, Man	BS/D1-3
				Mr HO Chun-sang, Son	BS/D5-2
				Mr LAW Kwan-pui, Alan	BS/E1-1
				Mr CHOI Hung-kei, Ken	BS/E4-3
				Mr CHU Yu-tin, Albert	SE/F3-1
				Mr TANG Hing-fung	SE/F5-2

11 Apr	1030	1230	Meeting with DB	<u>DEVB</u> Mr Ryan CHIU PAS(PL)3 Mr Justin TO AS(B)2 <u>BD</u> Mr AU choi-kai DB Mr HUI Siu-wai DDB Mrs HUI Ming-fong CSE/C; Co-chairman of WG Mr AU Wing-hung CBS/D; Co-chairman of WG
13 Apr	1000	1130	Meeting with Representatives of HKIA	<u>DEVB</u> Mr Ryan CHIU PAS(PL)3 Mr Justin TO AS(B)2 <u>HKIA</u> Mr Artur AU YEUNG Chi-king Member of BC Mr Dickie LAU Kam-sing Member of HKIA Mr TSANG Man-biu Member of BC
20 Apr	1500	1730	Meeting with BD on contract management	<u>DEVB</u> Mr Ryan CHIU PAS(PL)3 <u>BD</u>

				Mrs HUI Ming-fong	CSE/C; Co-chairman of WG
				Mr AU Wing-hung	CBS/D; Co-chairman of WG
				Mr TANG Kwok-kuen	SSE/C1; Member of WG
				Mr CHAN Tin-lun, Peter	SBS/Contract Management

Legend:

DEVB:	Development Bureau
BD:	Buildings Department
WG:	Working Group
HKIA:	The Hong Kong Institute of Architects
HKIE:	The Hong Kong Institute of Engineers
HKIS:	The Hong Kong Institute of Surveyors
BC:	Buildings Committee of the Board of Local Affairs under the HKIA
BSD:	Building Surveying Division under the HKIS
PAS(PL)3:	Principal Assistant Secretary (Planning and Lands)3
AS(B)2:	Assistant Secretary (Buildings)2
DB:	Director of Buildings
DDB:	Deputy Director of Buildings
AD/EB1:	Assistant Director / Existing Buildings 1
CBS:	Chief Building Surveyor
CSE:	Chief Structural Engineer
SBS:	Senior Building Surveyor
SSE:	Senior Structural Engineer
BS:	Building Surveyor
SE:	Structural Engineer
SO	Survey Officer
TO	Technical Officer