

IN THE MATTER OF
COMMISSION OF INQUIRY INTO THE CONSTRUCTION WORKS AT AND UNDER THE HUNG HOM
STATION EXTENSION UNDER THE SHATIN TO CENTRAL LINK PROJECT
(FORMERLY COMMISSION OF INQUIRY INTO THE DIAPHRAGM WALL
AND PLATFORM SLAB CONSTRUCTION WORKS AT THE HUNG HOM STATION EXTENSION
UNDER THE SHATIN TO CENTRAL LINK PROJECT)

SECOND WITNESS STATEMENT OF YUENG WAI HUNG

I, Yueng Wai Hung of 24/F and 25/F ADP Pentagon Centre, 98 Texaco Road, Tsuen Wan, Hong Kong, state as follows:

Introduction

1. I am duly authorised to make this witness statement on behalf of PYPUN-KD & Associates Limited ('**PYPUN-KD**'), in response to the requests set out in the letter from Lo & Lo (the Solicitors for the Commission of Inquiry ('**Commission**')) dated 4 April 2019 to PYPUN-KD in relation to the North Approach Tunnels. For convenience, I will adopt the terms and abbreviations as defined in my first witness statement dated 13 November 2018 ('**my first statement**') and the Witness Statement of Mak Yu Man also dated 13 November 2018 ('**Mr Mak's statement**'), including the '**M&V Agreement**' for the agreement with the Government dated 20 August 2012 whereby PYPUN-KD was appointed for the relevant consultancy works. I have read the Witness Statement of Chiu Chung Lai in final draft form ('**Mr Chiu's statement**'), which refers to the various engagements entered into by PYPUN-KD and the RDO supplementary to the M&V Agreement, and I agree with the content of Mr Chiu's statement.
2. Matters stated herein are within my personal knowledge and are true.
3. As mentioned in paragraph 2 of my first statement, I am a director of PYPUN-KD, and was involved in the Project as Leader – Building Submission Review & Compliance (BSRC) Team of PYPUN-KD until 1 January 2019. My experience and qualifications in engineering are set out in paragraphs 3 and 4 of my first statement.
4. Lo & Lo, on behalf of the Commission, has requested in three separate letters all dated 4 April 2019 information from PYPUN-KD in relation to three areas, being the North Approach Tunnels ('**NAT**'), the South Approach Tunnels ('**SAT**') and the Hung Hom Stabling Sidings ('**HHS**'). My evidence in relation to the RISC forms and the inspection and supervisory records (Issue 3), which is all PYPUN-KD is asked about for SAT and HHS, is very similar to that for NAT. However, I have provided three statements in respect of this issue as requested by Lo & Lo.

5. Prior to March 2018 when PYPUN-KD was told about the present problems with Contract 1112, as part of my work checking the design submission relating to Contracts 1111 and 1112, I checked submissions by Leighton on the design of the stitch joints and shunt neck during the design stage of the Project. I was also involved together with the BO Team with carrying out audits and site inspections on which we would check site supervision records and material testing reports submitted by MTRCL.
6. Since about March 2018, I have been providing additional services to the RDO under the supplementary engagements (mentioned below and in Mr Chiu's statement) for: (a) a check of RISC forms and QSP checklists for couplers, and a further and more comprehensive check of the site supervision records in relation to the construction of the EWL Slab of the SCL Hung Hom Station Extension on Contract 1112 (see paragraph 10 of Mr Chiu's statement) and (b) checking of RISC forms in relation to construction of the NAT, SAT and HHS on Contract 1112 (see paragraph 21 of Mr Chiu's statement). On account of the completion of various construction works of the Project, PYPUN-KD discussed with the BO Team the need for the level of personnel in the BSRC Team and it was decided that the team should be reduced. On 1 January 2019, in the light of this reduction I officially left the BSRC Team to join the M&V Team, although I still provide support to the BSRC Team including on the supplementary engagements.
7. The background to the Project and role and responsibilities of PYPUN-KD under the M&V Agreement are set out in Mr Mak's statement and my first statement, including as to:
 - 7.1 use of MTRCL's existing system to procure the Project (paragraphs 10 to 14 of Mr Mak's statement),
 - 7.2 role of RDO and M&V Consultant (PYPUN-KD) generally (paragraphs 15 to 24 of Mr Mak's statement),
 - 7.3 role and responsibilities of PYPUN-KD in relation to monitoring and verification (paragraphs 28 to 52 of Mr Mak's statement), and
 - 7.4 role and responsibilities of PYPUN-KD in relation to assessment of building submissions and compliance with building safety standards (work of the BSRC (Building Submission Review & Compliance) Team) (paragraphs 8 to 31 of my first statement).
8. To summarise:
 - 8.1 PYPUN-KD's roles were: (a) monitoring and verification (M&V), and (b) BSRC.
 - 8.2 M&V focussed on cost, programme and public safety.
 - 8.3 BSRC comprises: (a) assessment of building submissions, and (b) checking compliance with building safety standards. BSRC assessment of building submissions is related to design and plan vetting. BSRC work on checking compliance with building safety

standards is related to site inspection, site auditing and site witnessing as discussed with the BO Team.

9. Once PYPUN-KD had been appointed (as dealt with in my first statement and Mr Mak's statement), the Inception Report, the Monitoring Plan, the Verification Plan and the Review and Assessment Procedure were provided in relation to the work which PYPUN-KD was undertaking to the Director's Representative in draft before finalisation. During the course of the work which PYPUN-KD has carried out there had been regular meetings and almost daily exchanges, and sometimes hourly, with HyD, where the work which PYPUN-KD was to undertake was discussed and agreed upon. There were also the four representatives from the BD who were seconded to HyD for the Project, and whom I have referred to as the BO Team. Equally, we work closely with them on a daily basis, and discussed and agreed with them the work that was to be undertaken, including audits and inspections.

PYPUN-KD's responsibilities

10. The provisions of the Brief on PYPUN-KD's responsibilities were referred to in Mr Mak's statement and my first statement. I have also, at paragraphs 64 to 66 below, made a comparison with the role undertaken by the M&V consultant for the XRL project, which was materially different from that for the Project.

Monitoring

11. Under paragraph 4.1(b) of the Brief, PYPUN-KD was to carry out *'monitoring on MTRCL's works through a review of the concerned project documents and necessary site inspection and identification of and providing advice on key issues, which bear significant implications in respect of cost, programme and public safety to the Project'*.
12. Monitoring therefore does not relate to construction quality or construction record keeping. The objective of PYPUN-KD's monitoring is set out in section 2 of the Monitoring Plan [K1/154], which stated that *'[a]s described in the Assignment Brief Paragraph 6.3.4, the monitoring process will be on a risk basis with focus on the aspects of cost, programme and public safety'*.
13. Section 2.2.1 (General) under section 2.2 (Approach), stated: *'[t]he primary driver to focus our work on this extensive project, with numerous contracts, will be to identify the risks that may impact the cost, programme and public safety. The fact that the project programme is tight and that there are a number of interfaces with the existing operating railway that need to be managed will only lead to an increase in potential risks.'*
14. Section 2.2.1 then sets out the readily identified key risks: (a) SCL cost and programme, (b) contract interfaces, both internal and external, to the SCL project, (c) interface with the existing operating railway and system migration, and (d) systems integration, testing and commissioning, and states: *'[t]here are many other risks and the monitoring and verification tasks could become complex and inefficient if we do not focus on the key risks.'*

15. The focus points (of cost, programming and public safety) of PYPUN-KD's work was set by the Brief and elaborated upon in the Monitoring Plan which was approved by the RDO. It was necessary for there to be a structured approach focusing on the key risks to the monitoring work carried out by PYPUN-KD in co-ordination with the RDO. The alternative would be a scatter gun approach achieving very little in a project of this scale and size involving many contracts and an extremely wide range of issues in design, construction, and testing and commissioning.
16. As mentioned in Mr Mak's statement, PYPUN-KD's work adopted a risk-based approach (and necessarily had to, because on the vast scope of potential work to be carried out). As stated in section 2.2.2 (Risk-based Approach) PYPUN-KD adopted the Hong Kong SAR Government Environment Transport and Works Bureau's (ETWB) 'Risk Management for Public Works, Risk Management User Manual', which is based on international and local practices, as well as 'GEO Technical Guidance Notes No. 25 (TGN25) – Geotechnical Risk Management for Tunnel Works' specifically for geotechnical works.
17. The second paragraph of section 2.2.2 stated that PYPUN-KD *'will use the systemic risk management approach to identify key risks on the project to guide our Monitoring & Verification (M&V) focus, i.e. to set the direction and objectives of our tasks, and not for managing risk; it is because managing risk (such as risk mitigation measures, risk tracking etc.) is the responsibility of MTRCL.'*
18. Page 7 of the Monitoring Plan (towards bottom of page) stated that the *'actual management of the SCL project risks will be undertaken by MTRCL.'*
19. It is stated in the first paragraph on page 8 that the exact risk levels for PYPUN-KD to assess will need to be determined and agreed with RDO. For this, the MTRCL's risk register was discussed between the RDO and PYPUN-KD, including at regular meetings. Please see paragraphs 35, 36 and 46 of Mr Mak's statement as regards the risk register.
20. Section 3 (Key issues) set out various 'Key Cost Issues', 'Key Programme Issues' and 'Key Public Safety Issues'. These issues are clearly unrelated to construction quality or construction record keeping.
21. The beginning of section 4 (page 11) of the Monitoring Plan stated that PYPUN-KD's *'monitoring will be on a high level basis with a focus on the following activities:-*
 - *Monitoring by review of documents*
 - *Financial monitoring*
 - *BSRC monitoring*
 - *Site monitoring*
 - *E&M Systems Monitoring*
 - *Other support'*

22. Financial monitoring and E&M systems monitoring comprise major components of the monitoring work by PYPUN-KD. The Project is funded by public money and therefore both the Government and the public placed great emphasis on financial monitoring to prevent cost overruns, which is very common in construction projects in Hong Kong. For example, on a monthly basis PYPUN-KD had to check numerous interim payment applications from a very large number of contractors (and each payment application involved a very large number of cost items, as one could imagine of a project of this size and complexity). For E&M systems, the Project had significantly more project-specific (rather than typical) characteristics than past railway projects in Hong Kong, including the construction of new E&M systems, modification/upgrading of existing systems, integration of new and existing systems, the change of the train fleet, numerous railway line interchanges, and modification of existing stations to connect to the new SCL line. Details of the cost monitoring procedure and financial monitoring procedure are set out in Appendices B and C respectively to the Monitoring Plan.
23. As to monitoring by review of documents, section 4.1 states that such documents are the contract documents as stipulated in paragraph 6.3.4 of the Brief, which do not relate to construction quality or construction record keeping.
24. As to BSRC monitoring, section 4.3 noted that the work of the BSRC Team is independent from the *'routine monitoring work covered in this [monitoring] plan'*.
25. As to site monitoring, section 4.4.1 (at page 19) stated that during the site visits, PYPUN-KD will observe and record observations related to cost, programme and public safety. Section 4.4.2 states that *'detailed arrangements of site visits / inspections and documents to be reviewed will need to be agreed with RDO'*, and as envisaged, PYPUN-KD conducted regular visits to various construction sites. As dealt with in paragraphs 32 and 80 below, there have to-date in fact been let over 200 contracts in relation to the Project, and there are further several small contracts which may or may not be let.
26. As acknowledged in section 4.4.2, as the works progressed, PYPUN-KD would review the frequency of the scheduled visits to each contract site, *'and in addition to the scheduled visits, additional ad hoc visits may be required to follow up on issues identified or major events or other urgent matters.'* Therefore, additional visits would be made on any particular matter identified or other urgent matter. One such visit was on 31 July and 1 August 2017 to witness the final positioning and sinking of segment no 1 of the IMT (immersed tube tunnel) for the harbour crossing tunnel from Hung Hom Station to the Causeway Bay typhoon shelter. PYPUN-KD did not come across any such matters relating to stitch joints or the shunt neck prior to the discovery of the problems from about March 2018.

Verification

27. Under paragraph 4.1(c) of the Brief, PYPUN-KD was to carry out *'verification by conducting audits (including process and/or technical audits) to the activities/processes undertaken by the MTRCL, reporting and the necessary follow-up work'*.
28. In line with this, paragraph 1.2.2 of the Verification Plan [K1/189] stated that the verification approach *'is designed to advise the Government, as the owner and investor of the project, that the MTRCL will be delivering the Project Scope and Service requirements in line with established cost allocation and programme arrangements.'*
29. Paragraph 2.1.2 of the Verification Plan recited paragraph 6.4.1 of the Brief, which stated that: *'[v]erification shall comprise financial process and programme compliance, and public safety audits (hereinafter refer to as audits)...'*
30. Verification therefore does not relate to construction quality or construction record keeping, and paragraph 2.1.3 stated that *'verification will focus on:*
 - (a) Cost compliance*
 - i) Payments to MTRCL's consultants / contractors / agents under MTRCL's contracts;*
 - ii) Changes, modifications and variations with cost and / or time implications;*
 - (b) Programme compliance; and*
 - (c) Public Safety compliance.'*
31. Paragraphs 2.2.1 and 2.2.2 of section 2.2 (Scope) set out the time constraints and nature of verification work:
 - '2.2.1 The scope of the Verification will be in line with the tight programme for this project and the absolute volume of work being undertaken. Therefore, it will be necessary to focus on cost, programme and public safety aspects of the project based on the emerging risks identified as described in the Monitoring Plan. The various risks and issues will be prioritised and the verification programme prepared accordingly, based on which audits will be planned and conducted.*
 - 2.2.2 A verification programme of audits will be set up that will focus on three main categories, i.e. i) Cost Compliance, ii) Programme Compliance and iii) Public Safety Compliance. Each audit will deal with both process and technical compliance under each category in a specific contract. The process compliance audits include audits on MTRCL's management and control procedures as well as MTRCL's other requirements and procedures stipulated in the construction contracts. The technical compliance audits include audits on the technical approaches that are adopted to handle the project activities within the above-mentioned categories.'*
32. It could be seen that the focus is again on cost compliance, programme compliance and public safety compliance, and audits would be carried out on each of the one hundred contracts identified at paragraph 3.4.3 of the Verification Plan. In fact, since the Verification Plan was issued, about an additional 240 contracts have been let, making in total about 340 contracts – see paragraph 80 below.

33. Paragraph 2.2.2 states that audits are to deal with: process compliance (see paragraphs 39 to 41 below) and technical compliance (see paragraphs 42 to 45 below) and again states that the audits are to focus on cost, programme and public safety compliance.
34. Paragraph 2.2.3 lists the MTRCL base documents (known as Project Definition Documents) that PYPUN-KD was to review, which included:
- *Project Objectives*
 - *Service Requirements Document*
 - *Project Agreement*
 - *Project Cost Estimate and Finance Plan*
 - *Project Programme*
 - *Environmental Requirements*
 - *General System Assurance Requirements*
 - *Functional Requirements Manual*
 - *New Works Design Standards Manual*
 - *General and Particular Specifications (Civil Work and System-wide E&M)*
 - *Architectural Standards Manual*
 - *Various Strategy Documents (e.g. Fire, Safety, System Migration)*
 - *Construction Contract Documents (e.g. completion obligations, milestones, interim payment schedule, interfacing requirement etc.)'*

Paragraph 2.2.5 states that these are the documents against which technical issues will be reviewed.

35. Paragraph 2.3.3 stated:

*'For the main contract works the following is our initial assessment of the likely **Strategic Risk Groups**:-*

- *Engineering issues (e.g. issues on programme, methodology, safety etc.)*
- *Physical, Environmental and Third Party Impacts*
- *Supply Chain Overstretched and Resources Unavailable*
- *Variations*
- *Interfaces with the Operational Railway'*

(emphasis in original)

36. Such documents and risk groups are unrelated to construction quality or construction record keeping. Methodology on engineering issues referred to construction methods, sequence of works, interfacing issues, logistics, site access and transportation within the site.
37. Section 2.4 addressed cost verification, one of the major tasks of PYPUN-KD, and paragraph 2.4.1 remarked that *'cost verification is one of the important tasks under this Assignment with a view to assisting RDO to properly monitor the expenditures of the Project that is being implemented under 100 construction contracts in accordance with an extremely tight project programme.'* The paragraph and the paragraphs that follow go on to describe the work to be undertaken by PYPUN-KD.

Verification approach

38. As stated in paragraph 3.1.1 of the Verification Plan, for each verification audit, PYPUN-KD concentrated on the cost management, programme and public safety aspects.

Verification approach for process compliance

39. Section 3.2 sets out the work to be carried out by PYPUN-KD, which commences with PYPUN-KD's review of the existing MTRCL project audit processes for cost, programme and public safety, and validating these against MTRCL's established procedures. PYPUN-KD would also review the project audit procedures of MTRCL contractors and MTRCL's evidence of their own external audit.
40. Paragraph 3.2.4 stated that, if there were any major discrepancies, PYPUN-KD may then undertake an independent audit of one or more elements and went on to state that PYPUN-KD would expect to rely on the existing audit process as being in accordance with the well-established procedures and are therefore robust.
41. As to the scale of the work involved, audit sessions for both process compliance and technical compliance were carried out on the contracts let, which included the one hundred contracts set out in paragraph 3.4.3 (see also paragraph 80 below).

Verification approach for technical compliance

42. Section 3.3 deals with such audits, which *'include audits on the technical approaches that are adopted to handle the project activities within the categories of cost, programme and public safety.'* The risk based approach set out in section 2.3 is adopted.
43. Paragraph 3.3.2 states that *'[w]hile the Verification is a disciplined process, it will be impacted by the emerging risks and issues that are identified through the monitoring activities. Where any weakness or deficiencies are revealed further sampling may be taken in that specific area.'* No risk or issue relating to stitch joints, or the shunt neck were noted by PYPUN-KD or brought to its attention before about March 2018.
44. For both process compliance and technical compliance, subsequent rounds of verification audits would be carried out generally at six-monthly or yearly intervals, and the table under paragraph 3.4.3 set out such intervals for the audits for civil construction contracts (49 contracts) and system-wide E&M contracts (51 contracts) of the three types: Public Safety Compliance, Financial Process Compliance and Programme Compliance. It bears repeating that such audits do not relate to construction quality or construction record keeping. As stated in paragraph 80 below, there have been subsequently more contracts let on which audits would need to be carried out.
45. Paragraph 3.4.6 of the Verification Plan stated that PYPUN-KD will conduct a minimum of 1,000 audits (rather than 'assignments' as incorrectly stated in such paragraph) and issue audit reports to the RDO on the 100 contracts. The audits referred to there are in fact the paper audits which

are dealt with under the Verification Plan, and do not include the separate site audits which were to be carried out by the BSRC Team. This demonstrated the volume of work required of PYPUN-KD for such audits. In fact, there were, as stated in paragraph 80 below, about 340 contracts let, and PYPUN-KD has to date conducted about 940 paper audits.

Building Submission Review and Assessment Procedure, and Checking Procedure on Assessing the Compliance with the Building Safety Standards ('Review and Assessment Procedure')

46. Under paragraph 4.1(d) of the Brief, PYPUN-KD was to provide *'professional services in respect of the assessment of building submissions for compliance with the BO and other relevant ordinance, regulations and standards'*.

47. Section 2.1 of the Review and Assessment Procedure [K1/766] summarised the scope of works of the BSRC Team in respect of assessing building submissions as:

- '• examine **building plans and proposals** to a safety standard not inferior to that required under the Buildings Ordinance (BO) and related Regulations;
- examine **structural plans and proposals and method statements** in accordance with the standards not inferior to that required under the BO and related Regulations, and carry out any related actions such as recommending the acceptance of the submissions and conditions to be imposed, if any, for commencement of works, related site inspections, witnessing related site testing, etc.; and
- identify **the deficiencies, if any, in the submissions by the MTRCL and/or its consultants/agents and provide necessary advice.**'

(emphasis added)

48. Section 2.2 of the Review and Assessment Procedure on the other hand [K1/766] summarised the scope of works of the BSRC Team in respect of checking compliance with building safety standards as:

- '• examine proposals on precautionary and protective measures and check on site the safety installation of the measures;
- examine the temporary and permanent drainage systems and monitor the drainage tests conducted on site;
- examine documents relating to impact on existing buildings / structures and assess results, if any, such as condition surveys and monitoring reports submitted by MTRCL;
- assist in attending inspections and recommend follow-up actions on safety related emergencies relating to the Project construction sites and adjacent existing buildings / structures, and provide structural and geotechnical comments on the remedial / rectification measures, if any, carried out by MTRCL;
- assist in attending complaints about defects of adjacent private buildings caused by the works of the Project or not, and recommend follow-up actions, if any, to the Director's Representative and to advise on the monitoring of rectification works carried out by MTRCL;
- **conduct audit and surprise checks on construction sites on aspects of the structural safety and integrity of foundations, tunnels, superstructure, etc. for**

safety assurance and for compliance with the building safety standards, and examine the remedial proposals submitted by MTRCL if contravention is detected;

- *carry out site inspections to identify irregularities, contraventions or noncompliance with the building safety standards; and*
- *check the compliance of the completed works to ensure the standards achieved are not inferior to the requirements of the BO and allied regulations.'*

(emphasis added)

49. See paragraphs 52 to 55 and 56 to 63 below for further information about assessment of building submissions and checking compliance with building safety standards respectively. As to audits (scheduled audit or surprise audit/check), the audit is to be carried out in accordance with the BD's Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers ('**PNAPs**') ADM-18 (Annex 2 to my first statement [**K1/751**]), which at Appendix I sets out the scope of the audits.
50. The following documents will also be inspected during a site audit for safety assurance and for compliance with the building safety standards: (a) approved plans, method statements, temporary work designs, precautionary/preventative measures, (b) site supervision plan, (c) site supervision records of TCPs (Technically Competent Persons), (d) ground settlement monitoring records, (e) records of material deliveries (concrete, reinforcements, mechanical couplers), (f) materials test reports, and (g) certificates for special labour (eg. qualified welders' certificate).
51. Of these documents:
- 51.1 site supervision plan and site supervision records of TCPs: please see **Appendix A** hereto and paragraph 103 below as to nature of these documents, and
- 51.2 materials test reports: please see paragraphs 105 and 106 below in relation to PYPUN-KD's response to Issue 3.

Assessment of building submissions

Building surveying sub-team

52. As noted in paragraph 18 of my first statement, the work of the building surveying sub-team of the BSRC Team involved assessing a wide range of building plans and proposals, which are set out in section 5.1 of the Review and Assessment Procedure (repeated in paragraph 18 of my first statement).
53. As stated in paragraph 5.2.1, the building surveying sub-team would review and assess the submissions from a fundamental building aspect, such as:
- *Fire Safety Measures - including Means of Escape (MoE), Means of Access for fire-fighting and rescue (MoA), Fire Resisting Construction (FRC)*

- *Health and Environment - including lighting and ventilation for the office, lavatory, etc. and drainage disposal arrangement*
- *Provision of facilities for persons with disability*
- *Design of station layout, external connections and interchange facilities*
- *Emergency procedures and arrangements*
- *Demarcation, conglomerate and application of different Fire Safety Strategies applied to existing and new stations / trackside.'*

Structural engineering sub-team

54. As noted in paragraph 19 of my first statement, the work of the structural engineering sub-team of the BSRC Team involved assessing building submissions comprising structural plans, proposals and method statements. The types of documents to be assessed are set out in section 7.1 (repeated in paragraph 19 of my first statement).
55. As stated in section 7.3, the structural engineering sub-team would review and assess the structural plans, proposals and method statements from fundamental structural and geotechnical aspects, such as:
- *Loading and stability of framing, foundation systems and temporary works*
 - *Parameters and assumptions adopted in the design*
 - *Design standards and factors of safety*
 - *Structural adequacy of major structural elements*
 - *Use of materials and testing*
 - *Fire Resistance Period (FRP) requirements*
 - *Adequacy of precautionary measures*
 - *Effects on adjoining buildings, structures, lands, streets and utility services*
 - *Construction method, sequences and safety under temporary conditions*
 - *Estimates of ground settlement and groundwater draw down'*

Checking compliance with building safety standards

Building surveying sub-team

56. Under section 6.1, the types of documents to be checked by the building surveying sub-team of the BSRC Team to ensure compliance with building safety standards were drainage system test reports and other documents in relation to compliance with building safety standards. As stated, the review aimed at ensuring compliance with health standards and the performance of the completed drainage system.

57. Further, paragraph 6.3.1 stated that *'[t]he site inspection during site construction works will primarily cover those works related to safety and precautionary measures, such as hoarding'*, and the details are then identified in paragraph 6.3.2.
58. The other aspect of checking compliance with building safety standards by the building surveying sub-team was on completed building works, as stated in section 6.4:

'6.4 Compliance Check on the Completed Building Works – BS Sub-Team

6.4.1 General

Completion of building works under SCL project is to be checked for compliance with building safety standards. The works to be checked by the BS Sub-team are generally classified in the following types:-

- *Demolition works*
- *Drainage works*
- *Building (Station), tunnel works and ancillary buildings/structures*
- *Temporary buildings / structures*

6.4.2 Follow-up Actions for Completion of Demolition Works

Upon receiving the completion of works application, the following documents submitted in the application will be checked:-

- *Whether the contents of the Certification of Completion of Works are in order*
- *Whether the general site condition is safe and stable*

6.4.3 Follow-up Actions for Completion of Building (Station), Tunnel Works and Ancillary Buildings/Structures

Upon receiving the completion of works application, the following documents submitted in the application will be checked:-

- *Whether the contents of the Certification of Completion of Works are in order*
- *Whether the Record Plan or Final Stage of the SSCC / STIC / TSSC submissions generally tallies with the accepted plan and/or elevations*
- *Whether the precautionary measures including hoarding and scaffolding or temporary buildings/structures including site office are removed*
- *Whether the imposed conditions for modification or exemption are complied with*

6.4.4 Follow-up Actions for Completion of Temporary Building Works

Upon receiving the completion of works application, the following documents submitted in the application will be checked:-

- *Record Plan*
- *Whether key dimensions and layout are in accordance with accepted plans / record plans*
- *Whether the external elevation and the floor layout comply with the record plans or accepted plans*
- *Whether the imposed conditions for modification or exemption are complied with'*

Structural engineering sub-team

59. The types of documents to be checked by the structural engineering sub-team of the BSRC Team under section 8.1 to ensure compliance with building safety standards were set out in paragraph 24 of my first statement.
60. Paragraph 25 of my first statement then referred to the plans, reports and proposals to be checked under section 8.2, and section 8.3 deals with the types and details of the monitoring, inspection and audits.
61. I would repeat paragraphs 27 to 31 of my first statement regarding the limited scope of site inspections, audits and site witnessing under the M&V consultancy system in place. For clarification, I should explain a little more about site witnessing, which is dealt with in paragraph 29 [K1/734] of my first statement. The design of the works had to be approved by HyD/BD. In some of the approval letters, conditions were attached in relation to testing of the foundation works. In relation to those conditions, PYPUN-KD and the BO Team would witness the testing and that is what I refer to as site witnessing in my first statement and in this statement.
62. Up until about March 2018, there had been no suggestion from HyD or the BO Team that inspections or audits in respect of the stitch joints or shunt neck construction should form part of the sample areas where inspections and audits should take place, and PYPUN-KD also did not consider those areas should be chosen for inspections or audits. The works content in these areas was relatively small and I considered the works straightforward construction with almost no public safety risk.
63. Section 8.4 sets out the compliance checks on the completed building works by the structural engineering sub-team. Such checks related to follow-up actions for completion of foundation works, site formation works, alteration and addition works, building (station), tunnel works and ancillary buildings/structures, temporary buildings/structures, and temporary works in respect of excavation works. None of these relate in particular to stitch joints or the shunt neck.

Role and responsibilities as to quality specifically omitted from the M&V Agreement

64. PYPUN-KD was invited to tender for the similar role of M&V consultant to the Government for the XRL project, and the scope of works of the M&V consultant under the XRL project in the tender brief which PYPUN-KD saw included tasks which focused on the quality aspects of the construction works.
65. The role and responsibilities of the two briefs appear very similar. However, there are specific differences in that omitted from the scope of work of the M&V Consultant for the SCL Project was work going to 'quality' and 'safety' (under the brief for the XRL project, included within the scope of work was work relating to 'safety' generally and not limited to 'public safety' which was the case under the Brief for the SCL Project). The oft repeated words 'cost, programme and public safety'

in the Brief for the SCL Project are instead '*cost, programme, safety and quality*' in the brief for the XRL project.

66. I understand that the wider scope of work for the M&V consultant for the XRL project meant that the M&V consultant deployed a specially designated team of professionals to carry out regular quality audits on site, which is something omitted from PYPUN-KD's scope of works under the SCL Project.

PYPUN-KD acted proactively

67. There was an issue raised in the first part of the Commission of Inquiry about PYPUN-KD acting proactively.
68. PYPUN-KD would always act proactively in relation to its obligations and did so here. As I mentioned in paragraph 9 above, there was constant interchange between PYPUN-KD and HyD and the BO Team in relation to PYPUN-KD's functions as the M&V Consultant. So far as site inspection and audits are concerned, which were the context in which this issue was raised, these were dealt with, so I understand, in the Entrustment Agreement for the construction stage between the Government and MTRCL dated 29 May 2012 ('EA3') [G7/5595] (see paragraph 71 below), and I note our access to project areas and the construction sites is mentioned in paragraph 6.1.8 of the Brief.
69. Also, as a matter of practicality, in view of the overall scale of the Project, the roles and responsibilities of other parties (including in particular those of MTRCL and Leighton), the scope of the M&V Agreement (limited to the work referred to in Mr Mak's statement, my first statement and the matters referred to above) and the nature of the M&V consultancy, the extent of work that PYPUN-KD had to carry out within its scope of works, the non-interfering and non-obstructive manner by which PYPUN-KD was required to carry out its work, and the time constraints of the Project, proactive could only mean the manner in which PYPUN-KD was to carry out its work (speed in following-up on issues identified by PYPUN-KD itself in the course of its work under the M&V Agreement, or brought to its attention), or taking the initiative to follow-up on issues identified by PYPUN-KD itself or brought to its attention. PYPUN-KD was not, I consider, obliged to go in search of potential issues over and above those that could be identified when it was performing its duties.
70. The RDO, as recorded by numerous statements in Consultant's Performance Reports (**Annex 12** hereto) issued by the RDO on a quarterly basis, in fact refer to PYPUN-KD acting proactively and in a number of those instances identify the particular circumstances. **Appendix B** hereto is a summary of the RDO's comments on PYPUN-KD's work. These show just some examples of the way that PYPUN-KD acted proactively under the M&V Agreement.

Surprise checks

71. There was also mention of surprise inspections in the earlier part of the hearing and these are mentioned in paragraph 6.6.4(f) of the Brief. However, my understanding from the relevant provisions of EA3 and paragraph 6.1.8 of the Brief is that the potential surprise will be to the contractor and not to the MTRCL. I understand that clause 17 of EA3 between the Government and MTRCL dated 29 May 2012 [G7/5626] is the basis upon which the Government (the BD, in particular the BO Team) is empowered to access the construction sites and other areas where the Entrustment Activities are being performed. PYPUN-KD's ability to access these areas is also dealt with in paragraph 6.1.8 of the Brief.

72. Clauses 17.10 and 17.12 stated:

'17.10 At intervals which are reasonable, having due regard to the Entrustment Programme and with a view to minimising any delays thereto, following the date of this Agreement, Government shall, in addition to its monitoring rights set out in the preceding provisions of this Clause 17, be entitled to appoint an appropriate consultant to verify the Corporation's compliance with the Corporation's obligations under this Agreement and may, on reasonable notice, notify the Corporation in writing of:

(A) those of the Corporation's obligations compliance with which Government proposes to verify; and

(B) details of the employees and representatives of the appropriate consultant who require access rights to the Corporation's offices and any other places in which the Corporation is performing the Entrustment Activities in order to carry out the verification.

...

17.12 For the purposes of any verification pursuant to Clause 17.10 or Clause 17.11 the Corporation shall allow, and shall procure that its contractors and consultants allow, the appropriate consultant and/or Government's employees and other representatives (as the case may be), on reasonable notice and where possible during normal working hours, access to the sites referred to in Clause 17.10(B) and Clause 17.11(C), the Corporation's books and records and relevant personnel, information systems and reasonable office facilities, provided that, and only insofar as:

(A) such verification is carried out with due regard to minimising disruption to the Entrustment Activities;

(B) such verification relates to a particular matter or issue which was stated in the notice provided by Government to the Corporation; and

(c) such books, records, personnel and information systems relate to, or hold information about, the relevant obligations of the Corporation or the material or persistent breach or suspected breach.'

(emphasis added)

73. Access to MTRCL's offices and construction sites was therefore subject to the requirements as to reasonable notice, notice in writing, access at reasonable intervals and with a view to minimising delays to the works and identification of the particular matter or issue which is to be looked into.

74. Due to the size and complexity of the Project and the volume of documents generated, if certain records were to be checked (such as site supervision records maintained under the site supervision plan), prior arrangements had to be made with MTRCL for records to be retrieved and placed in the site office for checking. Likewise, if certain works were to be checked, the surrounding work area must be cleared and/or viewing platforms, etc need to be erected by the MTRCL to allow proper viewing and safety as there are almost constantly on-going works in the area. This was especially the case for the larger sites and/or sites involving complicated works. Otherwise, a lot of time would be wasted waiting for the records to be retrieved and works viewing arrangements to be made on the spot. The manner and approach by the parties – MTRCL (and its contractors) and PYPUN-KD and the BO Team was that of co-operation and partnership, and MTRCL (and its contractors) were helpful and provided the assistance required.
75. Hung Hom Station under Contract 1112 is an existing interchange of different railway lines (including the railway line to Lowu, Mainland China) and the construction works were especially complicated spreading over a very large site. PYPUN-KD and the BO Team therefore could not have had a detailed understanding of the physical characteristics of the site including as to available access routes within the site (such as the location of safe access paths by foot and how to move from one section of the site to another section) during the different stages of construction with on-going excavation and other works. Unlike many other sites, there was also a locked security gate at the entrance to the Hung Hom Station site which in any event would prevent access into the site without the permission of the MTRCL.
76. Notwithstanding the procedure under EA3 and paragraph 6.1.8 of the Brief (as referred to above), there were several surprise checks. The following surprise checks which I recollect were carried out by PYPUN-KD and the BO Team without objection from MTRCL:
- (a) 30 August 2013 for Contract 1109 (Sung Wong Toi and To Kwa Wan Stations and Tunnels) – as there appeared to be excessive ground settlement nearby Ma Tau Wai Station as revealed by ground monitoring records, PYPUN-KD and the BO Team carried out a site inspection to check whether diaphragm walls bentonite height was sufficiently high to ensure the stability of the excavated trench.
 - (b) 26 September 2014 for Contract 1107 (Diamond Hill and Kai Tak Tunnels) – as tunnel boring works threw up liquid bentonite or other fluid on the public road at ground level as informed by MTRCL, PYPUN-KD and the BO Team carried out a site audit to check site supervision records of the relevant TCPs.
 - (c) 13 January 2015 for Contract 1108 (Kai Tak Station and Associated Tunnels) – as a horizontal strut in an excavation pit had deformed as informed by MTRCL, PYPUN-KD and the BO Team carried out a site inspection to check the condition of the deformed strut.

- (d) 10 February 2015 for Contract 1106 (Diamond Hill Station) – after a scheduled site witnessing of a plate load test, PYPUN-KD asked the contractor for the core boxes (containing underground cores from previous coring works) to check the interface at the founding levels of diaphragm walls.
- (e) 27 September 2017 for Contract 1123 (Exhibition Station and Western Approach Tunnel) – as there appeared to be excessive ground settlement nearby Exhibition Station as revealed by ground monitoring records, PYPUN-KD and the BO Team carried out a site audit to check the records of the excavation and lateral support works against the approved plan.
- (f) 19 June 2018 for Contract 1123 (Exhibition Station and Western Approach Tunnel) – PYPUN-KD and the BO Team carried out a site inspection of the excavation works to check whether the excavation sequence was the same as that approved in the relevant plans.

77. In addition, *ad hoc* checks were carried out – 12 site inspections and 11 site audits – by PYPUN-KD and the BO Team and these are listed at Annex LPF-7 to the Witness Statement of Lok Pui Fai dated 13 September 2018 [H10/4791].

The issues on which PYPUN-KD was requested to respond

78. I set out below my response to Lo & Lo's letter dated 4 April 2019 on NAT. For convenience, certain defined terms defined in Lo & Lo's letter are adopted.

Issue 1

Paragraph 1.6.1

- 79. As stated in paragraph 1.6 of Lo & Lo's letter dated 4 April 2019, it is correct that PYPUN-KD was the M&V Consultant for the entire Project. PYPUN-KD's role and responsibilities as the M&V Consultant covered: (a) monitoring, (b) verification, and (c) assessment of building submissions and compliance with building safety standards work as defined and described in the M&V Agreement. However, despite the general title of 'M&V Consultant', the role and responsibilities of PYPUN-KD did not cover all 'monitoring' and 'verification' works in the broad sense of these words, but only as defined and described in the M&V Agreement.
- 80. While PYPUN-KD's work is very extensive as stated in the M&V Agreement (and described in Mr Mak's statement, my first statement and above), it did not (and could not) cover all monitoring and verifying of all works of this very large and complex project. **Appendix C** hereto lists the contracts which PYPUN-KD performed services in relation to under the M&V Agreement over the seven year period to date. These comprise 74 civil works contracts, 44 building services, systemwide electrical & mechanical and rolling stock contracts, 59 sets of interfacing works,

construction support for 79 sets of construction works, and 84 sets of advance works for the Entrustment Agreement for advance works dated 17 May 2011.

Meaning of 'public safety' as explained in the Inception Report

81. As mentioned in paragraph 19 of Mr Mak's statement, 'public safety' under the M&V Agreement, as explained on page 4 of the Inception Report [K1/45] meant safety to the public when the construction works for the Project are being carried out and in relation to specific testing and commissioning, and during testing and commissioning phase, and not quality or integrity of the permanent works constructed.
82. The 'Key Public Safety Issues' are set out under section 3.4 of the Monitoring Plan [K1/160]. It could be seen that they clearly relate to matters that may adversely affect public safety in respect of adjacent land, people and property, in particular construction methods adopted by contractors.

Substantial work quality (including public safety in the general sense as it relates to substantial work quality)

83. PYPUN-KD's roles and responsibilities in identifying and discovering issues concerning works and matters which raise concern about substantial work quality are as mentioned in the M&V Agreement and summarised in Mr Mak's statement, in my first statement, and above.
84. As noted in paragraph 8 above:
 - 84.1 PYPUN-KD's roles were: (a) monitoring and verification (M&V), and (b) BSRC.
 - 84.2 M&V focussed on cost, programme and public safety.
 - 84.3 BSRC comprises: (a) assessment of building submissions, and (b) checking compliance with building safety standards.
 - 84.4 BSRC assessment of building submissions is related to design and plan vetting.
 - 84.5 BSRC work on checking compliance with building safety standards is related to site inspection, site auditing and site witnessing as discussed with the BO Team.
85. Therefore, PYPUN-KD's work in identifying and discovering issues concerning works and matters which raise concern about substantial work quality comprise only BSRC work on checking compliance with building safety standards under site inspections, site auditing and site witnessing (as to which I would repeat paragraph 61 above).

Paragraphs 1.6.2 and 1.6.3

86. PYPUN-KD's role and responsibilities in identifying or discovering issues concerning works and matters which raise concern about public safety (meaning as explained in the Inception Report) therefore do not relate to works in connection with the three stitch joints (Issue 1).
87. Paragraph 1.3 of Lo & Lo's letter dated 4 April 2019 records that MTRCL considered that the lack of proper re-bars connection at the three stitch joint locations were due to defective workmanship.
88. As mentioned in paragraph 85 above, PYPUN-KD's work in identifying and discovering issues concerning works and matters which raise concern about substantial work quality (including public safety in the general sense as it relates to substantial work quality) comprise only BSRC work on checking compliance with building safety standards under site inspections, site auditing and site witnessing. This was inevitably going to be of a limited nature with the very extensive Project running for a number of years as explained above.
89. I refer to paragraph 62 above. There was no reason why a site inspection or audit of the construction works concerning any stitch joints should have taken place prior to the problems being discovered. Later, in about March 2018 PYPUN-KD was instructed to assist the RDO with investigating into defective stitch joints. Such work was work of the supplementary engagements referred to at paragraphs 10, 14, 16 and 21 of Mr Chiu's statement.
90. Therefore, prior to about March 2018, PYPUN-KD had no role or responsibility to identify, discover or investigate Issue 1.

Paragraph 1.7

91. I would repeat paragraphs 62 and 79 to 90 (as to PYPUN-KD's role and responsibilities), and 67 to 70 (as to PYPUN-KD being proactive) above. Prior to March 2018, PYPUN-KD in the course of its work being proactive as it was, did not come across any matter which would raise its awareness as to any issue relating to stitch joints, and no matter as to any issue with stitch joints was brought to its attention by any party. The suggestion (if it is being made) that PYPUN-KD should have identified the defects, if it were acting proactively, would amount to saying that PYPUN-KD should have carried out site inspections in every area of every contract for the entire Project. This is in my view simply ridiculous and would never have been permitted by MTRCL anyway.
92. PYPUN-KD had no role or responsibility in relation to Issue 1 or stitch joints generally until the supplementary engagements referred to at paragraphs 10, 14, 16 and 21 of Mr Chiu's statement. The fact that the RDO awarded the supplementary engagements to PYPUN-KD (with additional payment) demonstrates this.

Paragraph 1.8

93. The audit work by RDO/BD/PYPUN-KD which included inspection of construction documentation between 25 June and 5 July 2019 were in relation to the supplementary engagement referred to at paragraph 10 of Mr Chiu's statement. The purpose of such audit and its findings are set out in the report at Annex 2 to Mr Chiu's statement. Please also see the documents referred to at paragraphs 14, 16 and 21 of Mr Chiu's statement, and the email at **Annex 13** hereto for a copy set of reports, comments and findings of PYPUN-KD on Issue 1.

Issue 2Paragraphs 2.10.1 and 2.10.2

94. I would repeat that PYPUN-KD's role and responsibilities as the M&V Consultant did not cover the monitoring, verification and assessment of building submissions and compliance with building safety standards work of all works of the whole of the Project.
95. It would appear from paragraphs 2.1 to 2.9 of Lo & Lo's letter dated 4 April 2019 that Issue 2 concerns defective workmanship.
96. As mentioned above, PYPUN-KD's work in relation to construction work quality comprise only BSRC work on checking compliance with building safety standards under site inspections, site auditing and site witnessing to be carried out by PYPUN-KD.
97. I repeat paragraph 62 above. There was no reason why a site inspection or audit of the shunt neck should have taken place prior to the problems being discovered. In about May 2018, PYPUN-KD was instructed to assist the RDO with investigating the problems at the shunt neck – such work was work of the supplementary engagements referred to at paragraphs 14, 16 and 21 of Mr Chiu's statement.
98. Therefore, prior to about May 2018, PYPUN-KD had no role or responsibility to identify, discover or investigate Issue 2.

Paragraph 2.11

99. I would repeat paragraphs 62 and 79 to 90 (as to PYPUN-KD's role and responsibilities), and 67 to 70 (as to PYPUN-KD being proactive) above. Prior to May 2018, PYPUN-KD in the course of its work being proactive as it was, did not come across any matter which would raise its awareness as to any issue relating to the shunt neck, and no matter as to any issue with the shunt neck was brought to its attention by any party. I repeat the final two sentences of paragraph 91 above.
100. PYPUN-KD had no role or responsibility in relation to Issue 2 or the shunt neck generally until the supplementary engagements referred to at paragraphs 14, 16 and 21 of Mr Chiu's statement.

The fact that the RDO awarded the supplementary engagements to PYPUN-KD (with additional payment) also demonstrates this.

Paragraph 2.12

101. The audit work by RDO/BD/PYPUN-KD which included inspection of construction documentation between 25 June and 5 July 2019 was in relation to the supplementary engagement referred to at paragraph 10 of Mr Chiu's statement. The purpose of such audit and its findings are set out in the report at Annex 2 to Mr Chiu's statement. Please also see the documents referred to at paragraphs 14, 16 and 21 of Mr Chiu's statement for reports, comments and findings of PYPUN-KD on Issue 2.

Issue 3

Paragraphs 3.7 to 3.10

Request for Inspection / Test / Survey Check (RISC) forms

102. RISC forms are prepared by Leighton and approved by MTRCL's supervision team. Leighton would fill in a RISC form when it wished for MTRCL to carry out an inspection, test or survey, forward it to MTRCL, and MTRCL would then carry out the inspection / test / survey before stating the result on the form.
103. The Technical Memorandum and the Code of Practice (see Appendix A hereto) deal with among other things site inspections which have to be carried out in respect of private contracts under the BO as part of the site supervision process which is to be performed in the Project by MTRCL and its contractors. The relevant forms for such site inspections are Form A and Form B included in the Code of Practice. What happened in relation to the Project (which is not generally a private building project), was that MTRCL together with the relevant contractor would prepare site supervision plans for the various aspects of work for that particular contract. The site supervision plans would then identify the forms which were to be completed by MTRCL and the contractor after inspections. The form for the inspection was a form similar to Form A in the Code of Practice. In other words, it identified whether the result of the inspection had been satisfactory or not. Were the inspection not satisfactory, there should then be a non-conformance report (Form B). Consequently, the documents that PYPUN-KD would audit for its site audits for any area which was audited (because these documents would be kept on site) would be the documents produced under the site supervision plan in respect of those works, ie the Form A and Form B from the Code of Practice. The RISC forms were not documents PYPUN-KD would have been required to look at for any audit that was carried out and so, if these areas had been audited, the RISC forms would not have been looked at. Further, the RISC forms, were this a private building project, were not documents that would be inspected by the BD to check that the supervision had been carried out properly.

104. The site audits to be carried out (as mentioned above) relate inevitably to limited areas and neither the areas of the stitch joints or the areas of the shunt neck were areas where audits were carried out for the reasons explained above.

Materials testing records

105. These records are documents required to be generated under the approval letters from HyD/BD, which I referred to in paragraph 61 above, and are primarily: (a) concrete cube test reports, (b) rebars test reports, and (c) mechanical coupler test reports. At **Annex 14** hereto is a copy set of the two letters from the RDO dated 11 July 2013 and 5 November 2014 to MTRCL about requirements for the submission of such materials testing records by MTRCL. For submission requirements as to concrete cube test reports and reinforcement bar test reports, see 'Appendix II' to both letters. For submission requirements as to mechanical coupler test reports, see 'Appendix V' to the letter dated 5 November 2014 (for couplers without ductility requirement (Type I)) and 'Appendix XI' to the letter dated 11 July 2013 (for couplers for ductility requirement (Type II)). Other BO required test records include those for glass works, welding of structural steel members and anchor bolt pull-out tests, which are unrelated to stitch joints and the shunt neck.
106. PYPUN-KD had prior to March 2018 checked the concrete cube test reports, reinforcement bar test reports, and mechanical coupler test reports, and found the results of the available reports to be satisfactory. Such checks were carried out from time to time as reports were submitted by MTRCL to the BO Team. A full set of the reports are only available at the time of the completion of the works.

QSP checklists

107. These checklists relate only to installation of mechanical couplers. Under the approval letters from HyD/BD mentioned above, there is a requirement for a quality supervision plan ('QSP'). That plan for Contract 1112 was to be and has been vetted by PYPUN-KD. Under the letters, there also had to be on completion of the works under a particular contract submission of a quality supervision report ('QSR') to HyD/BD. The QSP checklists for the works would be included in that QSR. Once the QSR had been submitted, PYPUN-KD would then consider the report and the checklists supplied with it. The Contract 1112 works have not yet been completed. Consequently, the QSR has not been provided to HyD/BD, and when it is, PYPUN-KD will consider the QSR and the QSP checklists with it.

Paragraph 3.11

108. Please see paragraphs 102 to 104 above in response to paragraphs 3.7 to 3.10 of Lo & Lo's letter dated 4 April 2019. No auditing work was required to be carried out by PYPUN-KD in relation to the RISC forms under the M&V Agreement. Subsequently, as mentioned in Mr Chiu's witness statement (at paragraphs 10 and 21), PYPUN-KD was specifically instructed under supplementary engagements to inspect some of the RISC forms.

Paragraph 3.12

Rebars

109. As noted in paragraph 105 above, the RDO's submission requirements as to rebars test reports are set out in 'Appendix II' to the RDO's two letters dated 11 July 2013 and 5 November 2014.
110. To fulfil the RDO's submission requirements, MTRCL (its Competent Person) submitted the following documents: stockist's certificate, mill certificate of chemical composition, tensile test report, and the Competent Person's statement confirming:
- '(i) *All steel reinforcing bars used for the construction and the test specimens covered by the test reports are in accordance with the types and grades of steel shown in the agreed proposal.*
 - (ii) *Sampling and testing of steel reinforcing bars used have been carried out in accordance with PNAP APP-45 [for compliance with CS2:1995].*
 - (iii) *The acceptance criteria appropriate to each type and grade of steel reinforcing bars used have been complied with.*
 - (iv) *All steel reinforcing bars tests have been carried out by a laboratory accredited under the HOKLAS.'*
111. MTRCL on about 7 September 2017 submitted to the BO Team a batch of material testing records for rebars, which were passed on to PYPUN-KD. PYPUN-KD checked such records in September 2017, and found them to be in order. The 3 defective stitch joints were reconstructed in about March to July 2018, and the records for the rebars used have not yet been submitted to the BO Team.

Couplers

112. As noted in paragraph 105 above, the RDO's submission requirements as to coupler test reports are set out in 'Appendix V' to the letter dated 5 November 2014 (for couplers without ductility requirement) and 'Appendix XI' to the letter dated 11 July 2013 (for couplers for ductility requirement).
113. To fulfil the RDO's submission requirements, MTRCL (its Competent Person) submitted the following documents for couplers without ductility requirement: mill certificate of constituent material, permanent elongation test report, tensile test of assemblies report, and the Competent Person's statement confirming that *'the acceptance criteria appropriate to the tests have been complied with'*.
114. For couplers for ductility requirement, in addition to the documents for couplers without ductility requirement, MTRCL had to also submit: static tension test report, static compression test report, cyclic tension and compression test report, and quality supervision report (containing statement from the Competent Person confirming that *'quality supervision has been adequately provided'* and quality supervision records).

115. MTRCL on about 7 September 2017 submitted to the BO Team a batch of material testing records for couplers, which were passed on to PYPUN-KD. PYPUN-KD checked such records in September 2017, and had the following findings:
- 115.1 Type II couplers (for ductility requirement, which had more stringent requirements than Type I couplers without ductility requirement as noted above) were actually used in the works instead of Type I couplers, which was proposed in MTRCL's design submission and approved by the BO Team.
 - 115.2 MTRCL included QSP for Type II coupler works in the material testing records, but the corresponding QSR was not submitted. The timing of the submission of the QSR is dealt with in paragraph 107 above.
 - 115.3 Statements from the Competent Person of MTRCL confirming that the *'the acceptance criteria appropriate to the tests have been complied with'* and that *'quality supervision has been adequately provided'* had not submitted. These would also be submitted later under the procedure for completion.
116. PYPUN-KD conveyed its findings to MTRCL via phone call and email. A full set of documents is not required to be submitted until the completion of the works as explained above.

Paragraph 3.13

117. So far as its obligations under the M&V Agreement is concerned, PYPUN-KD had performed those obligations prior to discovery of the problems. Under the supplementary engagements as explained above PYPUN-KD has since then carried out some work in relation to the RISC forms.
118. The role and responsibilities of PYPUN-KD under the supplementary engagements are as set out in the documents referred to at paragraphs 10, 14 and 21 of Mr Chiu's statement, and Annex 13 hereto. See the same documents for reports and findings of PYPUN-KD on Issue 3.

4. PYPUN-KD's recommendations as the M&V Consultant (NAT)

Paragraph 4.1

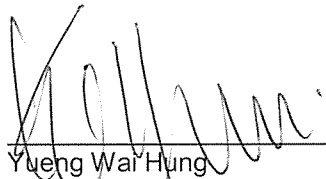
119. I agree with the statements and recommendations contained in paragraphs 68 to 75 of Mr Mak's statement, and consider them applicable to the matters referred to at paragraph (a)(2) of the expanded Terms of Reference.
120. I would further respectfully suggest that the MTRCL establish co-ordination meetings and workshops to encourage additional communication and exchange of views between the design manager and construction manager (or equivalent) of each of the interfacing contractors (or interfacing teams of the same contractor) on design assumptions, requirements as to construction, supervision and records, as well as the responsibilities of the different contractors (or interfacing teams of the same contractor) in relation to interfacing works between different

works contracts. The meetings and workshops should also address topics such as handover conditions, construction methods, sequence and materials in respect of the works of the contractor who had completed its works at the interface so as to properly inform these matters to the contractor on the other side of the interface (or in respect of the works of the team of the contractor which had completed its works at the interface so as to properly inform these matters to the other team of the same contractor on the other side of the interface).

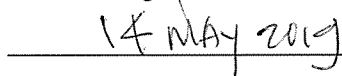
5. Miscellaneous – police statements

121. Mr CHAN Hoi-mo, Structural Engineer of PYPUN-KD's BSRC Team was interviewed by the Police on 21 September 2018 in relation to the on-site record check carried out in June, July and September 2018. A copy of the statement given to the Police is at **Annex 15** hereto.

Signed:


Yueng Wai Hung

Date:


14 May 2019

IN THE MATTER OF
COMMISSION OF INQUIRY INTO THE CONSTRUCTION WORKS
AT AND UNDER THE HUNG HOM STATION EXTENSION UNDER
THE SHATIN TO CENTRAL LINK PROJECT
(FORMERLY COMMISSION OF INQUIRY INTO THE
DIAPHRAGM WALL AND PLATFORM SLAB CONSTRUCTION
WORKS AT THE HUNG HOM STATION EXTENSION
UNDER THE SHATIN TO CENTRAL LINK PROJECT)

SECOND WITNESS STATEMENT OF YUENG WAI HUNG

Dated the 14th day of May 2019

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IN THE MATTER OF
 COMMISSION OF INQUIRY INTO THE CONSTRUCTION WORKS AT AND UNDER THE HUNG HOM
 STATION EXTENSION UNDER THE SHATIN TO CENTRAL LINK PROJECT
 (FORMERLY COMMISSION OF INQUIRY INTO THE DIAPHRAGM WALL
 AND PLATFORM SLAB CONSTRUCTION WORKS AT THE HUNG HOM STATION EXTENSION
 UNDER THE SHATIN TO CENTRAL LINK PROJECT)

CORRIGENDUM
TO SECOND WITNESS STATEMENT OF YUENG WAI HUNG DATED 14 MAY 2019

<u>Page</u>	<u>Paragraph</u>	<u>Content</u>
GG1/30	25	<p>Replace</p> <p><i>'As to site monitoring, section 4.4.1 (at page 19) stated that during the site visits, PYPUN-KD will observe and record observations related to cost, programme and public safety. Section 4.4.2 states that 'detailed arrangements of site visits / inspections and documents to be reviewed will need to be agreed with RDO', and as envisaged, PYPUN-KD conducted regular visits to various construction sites. As dealt with in paragraphs 32 and 80 below, there have to-date in fact been let over 200 contracts in relation to the Project, and there are further several small contracts which may or may not be let.'</i></p> <p>with</p> <p><i>'As to site monitoring, section 4.4.1 (at page 19) stated that during the site visits, PYPUN-KD will observe and record observations related to cost, programme and public safety. Section 4.4.2 states that 'detailed arrangements of site visits / inspections and documents to be reviewed will need to be agreed with RDO', and as envisaged, PYPUN-KD conducted regular visits to various construction sites. As dealt with in paragraphs 32 and 80 below, there <u>additional contracts</u> have to-date in fact been let over 200</i></p>

		contracts in relation to the Project, and there are further several small contracts which may or may not be let.'
GG1/31	32	<p>Replace</p> <p><i>'It could be seen that the focus is again on cost compliance, programme compliance and public safety compliance, and audits would be carried out on each of the one hundred contracts identified at paragraph 3.4.3 of the Verification Plan. In fact, since the Verification Plan was issued, about an additional 240 contracts have been let, making in total about 340 contracts – see paragraph 80 below.'</i></p> <p>with</p> <p><i>'It could be seen that the focus is again on cost compliance, programme compliance and public safety compliance, and audits would be carried out on each of the one hundred contracts identified at paragraph 3.4.3 of the Verification Plan. In fact, since the Verification Plan was issued, about an additional 240 contracts have been let, making in total about 340 contracts – see paragraph 80 below.'</i></p>

IN THE MATTER OF
COMMISSION OF INQUIRY INTO THE CONSTRUCTION WORKS AT
AND UNDER THE HUNG HOM STATION EXTENSION UNDER THE
SHATIN TO CENTRAL LINK PROJECT
(FORMERLY COMMISSION OF INQUIRY INTO THE DIAPHRAGM WALL
AND PLATFORM SLAB CONSTRUCTION WORKS AT THE
HUNG HOM STATION EXTENSION UNDER THE
SHATIN TO CENTRAL LINK PROJECT)

**CORRIGENDUM
TO SECOND WITNESS STATEMENT OF YUENG WAI HUNG
DATED 14 MAY 2019**

Dated the 23rd day of May 2019

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