

IN THE MATTER OF
THE 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

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 2 October 2018 to PYPUN-KD.
2. I am a director of PYPUN-KD, and am involved in the Shatin to Central Link project ('**Project**') as Leader – Building Submission Review & Compliance ('**BSRC**') Team of PYPUN-KD as the Monitoring & Verification Consultant ('**M&V Consultant**') to the Railway Development Office ('**RDO**') of the Highways Department ('**HyD**').
3. I have over 23 years of experience in structural engineering for buildings, retaining structures and civil works, and design and supervision of new building construction and civil and geotechnical works. I am a Member of the Hong Kong Institution of Engineers and a Member of the Institution of Structural Engineers of the United Kingdom. I am a Registered Structural Engineer under the Buildings Ordinance (Cap 123). **Annex 1** hereto is a copy of my CV.
4. As Leader – BSRC Team and supported by other team members, I provide assessment on building submissions submitted by the MTR Corporation Limited ('**MTRCL**'), and input on compliance with building safety standards, identify deficiencies, if any, in building submissions and provide necessary advice to RDO and the Buildings Department ('**BD**') / BO Team (defined in paragraph 27 of Mr Mak's witness statement – see paragraph 6 below). I was also the lead structural engineer in the BSRC Team responsible for Hung Hom Station Contract WC1112 ('**Contract 1112**').
5. Matters stated herein which are within my personal knowledge are true. Matters stated herein which are not within my personal knowledge are true to the best of my information, knowledge and belief.

Background and roles of various parties

6. I have read the Witness Statement of Mak Yu Man on behalf of PYPUN-KD in final draft form, and agree with the background and other matters set out in paragraphs 7 to 54 of that statement.
7. I would like to describe below the work of the BSRC Team.

Assessment of building submissions and compliance with building safety standards (work of the BSRC Team)

8. Under paragraph 6.6.1 of the Brief, the BSRC Team shall provide to the Director's Representative assessments on building submissions submitted by MTRCL and/or its consultants/agents, and provide input on compliance with building safety standards in respect of the Project. The BSRC Team is therefore to liaise with the BO Team, and not with MTRCL or its contractors.
9. Paragraph 6.6.2 of the Brief draws attention to *'the particularly tight programme in the project programme and thus only a minimum period for review and assessment, and compliance check could be allowed for in the review processes. The Consultants shall review and assess the building submissions and check compliance with the building safety standards in accordance with the agreed procedures.'* The agreed procedures are referred to in paragraph 13 below and onwards.
10. The scope of the BSRC Team's services on assessment of building submissions is set out in paragraph 6.6.3 of the Brief, and services on checking for compliance with building safety standards are set out in paragraph 6.6.4 of the Brief.
11. The approach and methodology for building submission assessment activities is set out in Section 5.6 of the Inception Report (Annex 2 to Mr Mak's witness statement). As stated in paragraph 5.6.4, the BSRC team provides professional services for the vetting of MTRCL submissions. In particular, *'[v]etting procedures are implemented based on BD's adopted approach and methodology but with a streamlined and more efficient process to further expedite the vetting and approval process as the Project moves into the construction phase.'*
12. The BSRC Team's focus areas are set out on pages 26 and 27 of the Inception Report. As to the focus areas of the site and audit inspections listed on the first half of page 28, these are as provided in the BD's Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers ('PNAPs') ADM-13 and ADM-18 (**Annex 2** hereto), that is, they are the matters of inspection the BD would carry out for a private sector building project, on the understanding that the employer/developer would properly carry out their duties under the Buildings Ordinance statutory regime.

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

13. **Annex 3** hereto is the M&V Consultant's Review and Assessment Procedure, a deliverable under paragraph 6.6.2 of the Brief.
14. The document sets out in detail the scope of the M&V Consultant's work in respect of: (a) assessment of building submissions (Sections 2.1, 3 and 5), and (b) checking compliance with building safety standards (Sections 2.2, 6, 7 and 8).
15. As noted in Section 4 of the Review and Assessment Procedure, the BSRC Team comprise professional and technical staff in the two disciplines of structural engineering and building surveying. There was a structural engineering sub-team and a separate building surveying sub-team.
16. Details as to the services and procedures are set out below. These services did not involve site supervision.

(a) Assessment of building submissions

17. As noted in Section 3.1 of the Review and Assessment Procedure, and in-line with the BD's regime for private sector building projects (including the BD's 'Three-Tier' system), a curtailed check system on fundamental issues is used. The *'flexible and as-expeditiously-as-possible time frame'* approach is set out in Section 3.2, and the assessment standard is in accordance with the Buildings Ordinance (Cap 123, '**BO**'), regulations thereunder, the BD's Codes of Practice, and the BD's PNAPs (Section 3.3 of the Review and Assessment Procedure). The 'Three-Tier system' is the system adopted by the BD to process submissions by way of the Basic Grade Professional, Senior Professional and Chief Professional tiers. A submission is vetted by a professional of each tier. The structural engineers and building surveyors in PYPUN-KD's BSRC Team assists the Basic Grade Professional tier of the BO Team.
18. The BSRC Team's work on assessment of building submissions involved vetting of structural plans and a wide range of building plans and proposals. The types of documents to be checked by the building surveying sub-team of the BSRC Team to ensure compliance with building safety standards (including in relation to the drainage system) are set out in Section 5.1 of the Review and Assessment Procedure. Typical building submissions are:
 - General building plans (for submission of Safety and Security Coordinating Committee (SSCC), Trackside Safety and Security Committee (TSSC) and Station and Transport Integration Committee (STIC))
 - Fire safety strategy reports (for stations and trackside)
 - Drainage plans including temporary and permanent drainage systems

- Demolition plans
- Other plans involving temporary structure, such as hoarding, site office, etc.

19. As regards the structural engineering sub-team of the BSRC Team, the wide ranging types of building submissions to be assessed comprise structural plans, proposal and method statements on:

- Ground investigation plans
- Site formation plans
- Foundation plans
- Pile cap / basement plans
- Superstructure plans
- Tunnel / cross passage structure plans
- Alteration and addition plans
- Excavation and lateral support plans
- Tunnel excavation and temporary support plans

(Section 7.1 of the Review and Assessment Procedure)

20. The checks of the plan submissions by the BO Team and the M&V Consultant were only a curtailed basis. As stated in paragraphs 6 to 13 of the BD's PNAP ADM-19 (**Annex 4** hereto), a curtailed check system is adopted by the BD to check on fundamental issues only in processing plan submissions, and non-fundamental issues and will not be checked and will not be raised as disapproval items.

21. This is confirmed in Section 7.3 of the Review and Assessment Procedure, which states that the assessment by the BSRC Team is on the fundamental and structural and geotechnical aspects (rather than detailed design or actual construction details), on the following:

- 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

22. **Annex 5** hereto is a flow chart setting out the agreed procedure in practice for the vetting of plans, and a sample instruction from the RDO to PYPUN-KD to vet a structural plan/submission.

(b) Work regarding compliance with building safety standards

23. The building surveying sub-team of the BSRC Team carries out compliance checks against building safety standards and also follow up action after the completion of building works under the Project for the following: demolition works, drainage works, building (station), tunnel works, ancillary buildings/structures, and temporary buildings/structures (Section 6.4).

24. As regards the structural engineering sub-team of the BSRC Team, Section 8.1 sets out the wide ranging types of documents to be checked:

- Method statements and proposals on precautionary and protective measures
- Monitoring records and reports
- Site supervision plans
- Registered Geotechnical Engineer (RGE) Technically Competent Person (TCP) T5 reports
- Test proposals
- Material test reports and certificates such as concrete cube compression test reports, mill certificates and tensile test reports for steel rebar, fire material certificates, etc.
- Documents relating to impact on existing buildings / structures and assess results such as condition survey reports and pre-construction defect survey reports
- Other documents in relation to compliance with building safety standards.

25. The plans, reports and proposals to be checked include:

- Site Supervision Plans (SSP): are reviewed with the aim to ensuring that the SSP comply with the Code of Practice for Site Supervision 2009 and Technical Memorandum for Supervision Plans 2009. Special attention will be paid to the nominated TCPs' (Technical Competent Persons) qualifications and their relevant experience, the proposed supervisory frequency, the numbers of TCP provided and any imposed conditions required at critical stages of the work, etc.
- Registered Geotechnical Engineer's (RGE) TCP T5 reports: relate to works with significant geotechnical content, in which case conditions / requirements will be imposed requiring the RGE's TCP of T5 ranking (the highest ranked professional responsible for site supervision)

to submit these reports relating to progress of the works, results of monitoring during construction, site observations, inspection records, professional review, conclusion and recommendations.

- Ground monitoring reports: are reviewed with the aim to checking monitoring check points and groundwater tables and the effect of the construction works on existing buildings, structures and utilities. Also aims at ascertaining the detailed conditions of the site, such as ground movement, groundwater level and the movement of adjacent structures. The information reflects how the area in the vicinity of the site is affected by the works. The BSRC Team would analyse the results and provide advice and comments, if necessary.
 - Test proposals and material test reports and certificates: are reviewed with the aim to checking compliance of the completed works and materials used in the construction with the design assumptions and specifications as shown on accepted building submissions (such as concrete and reinforcement tests).
 - Method statements: are reviewed with the aim to checking compliance of the construction sequence with the accepted building submissions. Attention is drawn to the construction safety, constructability, consistency with design assumptions, disturbance to the public and public safety. Any interfaces with the public are carefully examined.
 - Proposals on precautionary and protective measures: are reviewed with the aim to ensuring no disturbance to the public by way noise, dust, etc. Most importantly, public safety is one of prime concerns in the review.
 - Documents relating to impact on existing buildings / structures and assessment of results e.g. monitoring reports and survey reports: are reviewed with the aim to maintaining a continuing and detailed record of existing buildings / structures in the vicinity of work area. Advice will be provided if there is any abnormal situation or monitoring data that has reached the AAA (Alert-Alarm-Action) levels.
26. As to the BSRC Team's work on site for checking compliance with building safety standards, this work involved site monitoring and auditing as instructed by the BO Team from time to time. The system adopted by the BSRC Team is that of the BD's PNAPs ADM-13 and ADM-18 (Annex 2 hereto), which is the BD's framework for site monitoring and site auditing respectively. In addition, *ad hoc* site inspection will be conducted primarily for witnessing trial installations, site tests (e.g. pile load tests), and other safety related inspections.
27. Section 8.3.2 of the Review and Assessment Procedure details the aspects of site monitoring, audits and inspections. The following aspects are included for each of the three:

Site monitoring

- Absence of adequate precautionary measures
- Departure from agreed work sequence or procedures
- Inadequacy of experience of workmen or plant operators for specially hazardous operations
- Divergence or deviation in a material way from the drawing, plans and/or Project Management Plan
- Use of defective materials
- Lack of supervision by the person responsible
- Non-compliance with conditions imposed
- Contravention of provision of the Buildings Ordinances or subsidiary legislation.
- Site safety inspection and site quality inspection: for structural related site inspections, emphasis on site safety for various types of structural works including site formation, superstructure, foundation, excavation and lateral support works, demolition and quality of works to ground investigation works, foundation works and soil nail works. For building survey related site inspections: emphasis on precautionary measures including hoardings and other protective works to ensure adequacy of protection of public safety.

Site auditing

- Presence of qualified supervisory staff
- Material delivery record
- Accepted plans and related correspondence kept on site
- Bearing stratum and founding levels
- Pile depth
- Dimensions of pile and footing
- Strength of concrete and rebar
- Cast-in anchors
- Stability of falsework for critical elements

Site inspection

Site visit and inspection of the following items anticipated:

- Trial installation test for piling, for e.g. socketted H-piles and minipiles
- Piling and foundation performance tests including coring tests to large diameter bored piles and proof loading tests
- Testing of drainage works to ensure compliance with the prescribed standards

- Other inspections on safety-related emergencies and on complaints about defects of adjacent private buildings also carried out when necessary
28. It could be seen that the scope of the M&V Consultant's work is wide ranging, in view of the fact that responsibility for the carrying out of the construction works, its supervision, and compliance with the BO (and various regulations made thereunder) rests with the developer/employer (MTRCL) and the contractor (Leighton), the self-regulatory system whereby BD (the BO Team) is reliant on MTRCL and Leighton fulfilling its obligations under the various supervision regimes and plans (including by way of the appointment of the Competent Person), and the M&V Consultant's 'behind the scenes' and supportive role to the BO Team.
29. For the construction of the diaphragm walls and the platform slabs, the implemented procedures were as follows:

Site witnessing

- 29.1 The witnessing is carried out jointly by the BO Team and the BSRC Team for specific matters stated in the BD's approval letters to MTRCL and Leighton for the carrying out of construction works, including for foundation works, such as witnessing bearing stratum of foundation footing:
- (1) a request is received by the BSRC Team from MTRCL to witness a trial / test in accordance with the conditions imposed in the BD's approval letters,
 - (2) the BSRC Team will inform the BO Team of MTRCL's request and seek the BO Team's permission to witness the trial / test,
 - (3) at the trial / test, the BSRC Team will witness the trial / test and check the result against the relevant compliance requirement, and
 - (4) the BSRC Team will then complete the inspection form in the form/template provided by the BO Team, and prepare a report of observations and findings to the BO Team. **Annex 6** hereto is the form/template provided by the BO Team, and a sample report.

Site inspection

- 29.2 The inspections are carried out jointly by the BO Team and the BSRC Team on an *ad hoc* or 'as needed' basis:
- (1) a request is received by the BSRC Team from the BO Team for an inspection, such as in relation to a structural deficiency issue, safety related emergency, or

complaint by the general public, or a concern is identified by the M&V Consultant itself,

- (2) the BSRC Team will confirm with the BO Team the objective of the site inspection,
- (3) the BSRC Team will carry out inspection and provide views on any safety related irregularities or contraventions of the Buildings Ordinance (Cap 123) or regulations, and
- (4) the BSRC Team will then prepare a site inspection report in the form/template provided by the BO Team. **Annex 7** hereto is the form/template provided by the BO Team. In respect of Contract 1112, the BSRC Team carried out one site inspection, on 21 January 2014 of trial excavation for diaphragm walls – PYPUN-KD cannot now locate a copy of the inspection report.

Site audit

29.3 The audits are carried out jointly by the BO Team and the BSRC Team also on an *ad hoc* or 'as needed' basis:

- (1) an instruction is received by the BSRC Team from the BO Team to carry out a site audit (the audit being the equivalent to an audit pursuant to the BD's PNAP ADM-13 and ADM-18 (Annex 2 hereto)),
- (2) the audit work is to verify that the Site Supervision Plan (SSP) and the respective duties of MTRCL and Leighton thereunder are implemented on site by way of spot-checking of supervision checklists/records maintained on site, and
- (3) the BSRC Team will then complete a site audit report in the form/template provided by the BO Team. **Annex 8** hereto is the form/template provided by the BO Team, and a sample audit report. The annexed form/template is for auditing of superstructure works (the BSRC Team was not asked by the BO Team to carry out site audit of foundation works for Contract 1112), and the annexed sample report was the finalised report, but unsigned (the signed version was sent to the BO, and PYPUN-KD did not retain a copy of the signed version).

The BSRC Team jointly with the BO Team carried out two audits on couplers on 22 and 24 January 2014 as regards the threading process carried out in the fabricating yard of the Contract 1112 site, and also to witness the sampling, assembling and testing of couplers. A copy of the inspection report is at **Bundle H10/4797** (in Annex LPF-7).

30. The agreed procedures in practice for building surveying aspects were as follows:

Site inspection – submission of hoarding / temporary site office / demolition plans

30.1 The inspection is carried out by the BSRC Team (sometimes jointly with the BO Team):

- (1) upon receipt of instruction from the BO Team, of hoarding / temporary site office / demolition plans, a site inspection will be arranged to check actual site conditions against submitted plans,
- (2) the BSRC Team will then create an assignment form for BO Team's endorsement before carrying out the site inspection, and
- (3) subsequent to the inspection, the BSRC Team will prepare an inspection report and submit it to the BO Team.

Site inspection – hoarding / temporary site office

30.2 The inspections are carried out by the BSRC Team (sometimes jointly with the BO Team):

- (1) to check site conditions and compliance with the Buildings Ordinance on a regular basis (for proposal for hoarding / temporary site office already agreed to by the BO Team: every six months to one year, and for proposal yet to be agreed: every three months), and
- (2) subsequent to the inspection, the BSRC Team will prepare an inspection report and submit it to the BO Team.

Site inspection – completion of works under separate construction contracts

30.3 The inspection will be carried out jointly by the BO Team, BSRC Team and MTRCL:

- (1) subsequent to the BO Team's receipt of MTRCL's Buildings Department Form BA 13 submission notifying the BO Team of the proposed inspection date. The inspection will check the construction against approved drawings,
- (2) the BSRC Team will create an assignment form for BO Team's endorsement before carrying out the site inspection, and
- (3) subsequent to the inspection, the BSRC Team will prepare an inspection report and submit it to the BO Team.

31. I note that a list of site inspections, site audits and site witnessing for Contract 1112 by the BO Team and the BSRC Team is at Annex LPF-7 to the Witness Statement of Lok Pui Fai dated 13 September 2018 [**Bundle H10/4791**]. The contents of the list are consistent with the BSRC Team's records.
32. I set out below my response to Requests 2 and 3 of Lo & Lo's letter dated 2 October 2018. Mr Mak is responding to Requests 1 and 4.

Request 2 – Alleged Cutting of Rebars

(a) Explain and confirm whether Your Company has any knowledge of the alleged cutting of threaded steel bars and existence of a gap at threaded steel bar/coupler connections for diaphragm walls to slab and slab to slab (not limited to those stated in MTRCL Report dated 15 June 2018) during the construction period on site. If yes, provide detailed particulars. If no, explain why not.

33. So far as I am aware, during the construction period PYPUN-KD had no knowledge of the alleged cutting of threaded steel bars or existence of a gap at threaded steel bar/coupler connections for diaphragm walls to slab and slab to slab (whether the alleged instances stated in the MTRCL Report dated 15 June 2018 ('**MTRCL Report**', [**Bundle B1/1**]) or otherwise).
34. As noted in Mr Mak's witness statement, PYPUN-KD's work on monitoring and verification focused on cost, programme and public safety aspects, and PYPUN-KD was not required to carry out site supervision (paragraph 4.2 of the Brief).
35. PYPUN-KD was not requested by the RDO or BO Team to inspect construction works on site related to threaded steel bar/coupler connections for diaphragm walls to slab and slab to slab during the construction period on site, including the actual coupler connection works.
36. By way of summary of the matters stated above and in paragraphs 7 to 52 of Mr Mak's witness statement as to PYPUN-KD's role:
- 36.1 Our roles were: (a) monitoring and verification (M&V), and (b) BSRC.
- 36.2 M&V focussed on cost, programme and public safety, which did not relate to construction work quality or its supervision.
- 36.3 BSRC comprises: (a) assessment of building submissions, and (b) checking compliance with building safety standards.
- 36.4 BSRC assessment of building submissions is related to design and plan vetting, which also did not relate to construction work quality or its supervision.
- 36.5 BSRC work on checking compliance with building safety standards is related to site inspection, site auditing and site witnessing as instructed by the BO Team. To date, no

instruction has been given for PYPUN-KD to carry out site inspection, site auditing, or site witnessing of construction works involving couplers. As noted above, the procedures and standards adopted by the BSRC Team in its checks are those adopted by the BO Team, which are as stipulated in the BO and its regulations.

37. Section 5.3.1 of the MTRCL Report [**Bundle B1/21**] referred to MTRCL's method of 'Hold Points' based on the approach to quality control in the United Kingdom and now adopted in the civil construction industry in Hong Kong. To my knowledge, most large scale construction projects in Hong Kong adopt this method. Bundle B1/22 and B1/23 refer to five separate Hold Points, the supervision of which did not involve PYPUN-KD or the BO Team, but were carried out by Leighton Contractors (Asia) Limited's ('**Leighton**') and MTRCL.
38. Section 6.2 of the MTRCL Report [**Bundle B1/32**] refers to the incidence of the Non-Conformance Report related to the cutting of the threaded section of reinforcement steel bars. PYPUN-KD at the time, and indeed, prior to about May 2018, was not aware of these incidents. PYPUN-KD's attention was not drawn by Leighton, MTRCL, the RDO or BD (if the RDO and BD had in fact known about it at the time) to the incident, and PYPUN-KD was not provided with the Non-Conformance Report or the communications relating to this report.
39. Under the MTRCL's systems, the incident was a matter between it and Leighton (and Fang Sheung) and I understand would have been dealt with at the site working level, and not necessarily brought to the attention of the RDO or BO Team. If the matters was resolved to the satisfaction of MTRCL, it would not be escalated to the RDO or BO Team (or PYPUN-KD). According to the non-conformance records [**Bundle C27/20357**], the matter appears to have been considered in detail by MTRCL and Leighton, and appears to have been properly resolved or closed out by them.
40. Since about August 2018, the RDO has been in discussions with PYPUN-KD for PYPUN-KD to review the Non-Conformance Reports to close out the reporting process and see what impact the reports have on cost, programme or public safety of the Project. The RDO and PYPUN-KD are presently in discussions regarding additional payment and the scope of this review, which is outside the original scope of Agreement No CE 7/2012 (HY) dated 20 August 2012 between the Government of the Hong Kong Special Administrative Region (as the 'Employer') and PYPUN-KD (as the 'Consultants') ('**M&V Agreement**') under which PYPUN-KD was appointed the M&V Consultant.

(b) Explain and confirm whether Your Company has any knowledge of any cutting of threaded steel bars and existence of a gap at threaded steel bar/coupler connections for diaphragm walls to slab and slab to slab in the as-built structures without any rectification. If yes, provide detailed particulars. If no, explain why not.

41. So far as I am aware, during the construction period PYPUN-KD had no knowledge of any cutting of threaded steel bars or existence of a gap at threaded steel bar/coupler connections for diaphragm walls to slab and slab to slab in the as-built structures.
42. As noted above, PYPUN-KD's work on monitoring and verification focused on cost, programme and public safety aspects, and PYPUN-KD shall not be required to carry out site supervision (paragraph 4.2 of the Brief). PYPUN-KD was not requested by the RDO or BO Team to inspect works on site related to threaded steel bar or any gap at threaded steel bar/coupler connections for diaphragm walls to slab and slab to slab during the construction period on site. PYPUN-KD was also not in receipt of as-built drawings in relation to threaded steel bar/coupler connections for diaphragm walls to slab and slab to slab.

(c) Describe what has been done by Your Company to date in relation to the alleged cutting of threaded steel bars at the diaphragm walls and EWL/NSL Slabs and any other defective works under Contract 1112. As a result of the steps taken by Your Company, explain and describe what Your Company has discovered in so far as defective steel fixing works and the other defective works are concerned.

Alleged cutting of threaded steel bars at the diaphragm walls and EWL/NSL Slabs

43. On about 1 June 2018, PYPUN-KD was engaged by the RDO, outside of the M&V Agreement, to carry out a check of the inspection and supervision records in relation to the construction of the EWL Slab (but not the NSL Slab) ('**Supplementary Engagement**').
44. The following documents were made available for inspection by the BO Team and PYPUN-KD:
- 44.1 Inspection & Testing Plan (ITP) (prepared by Leighton and approved by the MTRCL), Leighton's 'Cast In-situ Concrete Quality Control Checklist – SCL' and corresponding Request for Inspection / Survey Check (RISC) forms (prepared by Leighton and approved by MTRCL). These documents were not provided to PYPUN-KD at the time of construction.
- 44.2 Site Supervision Plans (SSP) (prepared by Leighton and MTRCL, and vetted by PYPUN-KD) and the corresponding supervision records. These records were to be kept on site by MTRCL and Leighton for inspection by the BO Team (or PYPUN-KD) when requested by the BO Team.
- 44.3 Quality Supervision Plan (QSP) and MTRCL's/Leighton's corresponding site supervision records for coupler installation at connection between EWL slabs and diaphragm wall panels. The QSP was submitted to the BO Team and the BO Team provided it to PYPUN-KD for vetting. The corresponding site supervision records were to be kept on site by MTRCL and Leighton for inspection by the BO Team (or PYPUN-KD) when requested by the BO Team.

45. Pursuant to the Supplementary Engagement, a check of these records was undertaken by PYPUN-KD jointly with representatives of the BO Team and RDO in June, July and September 2018. PYPUN-KD's findings to-date were set out in a series of five draft reports issued on about 19 June, 16 July, 6 and 17 August (again dated 6 August) and 27 September (dated 24 September) 2018 to the RDO for its comments. The reports issued on about 19 June and 16 July 2018 were later consolidated to create the report issued on about 6 August 2018, and the reports issued on about 17 August and 27 September 2018 were revisions of the report issued on about 6 August 2018, incorporating comments received from the RDO. A copy set of the five draft reports is at **Annex 9** hereto.
46. PYPUN-KD is awaiting the RDO's comments on the draft report issued on about 27 September 2018. This report summarised PYPUN-KD's findings, and stated observations on possible irregularities in respect of inspection and supervision records for coupler installation, the Inspection & Testing Plan, the Site Supervision Plan and the site supervision records.
47. Also as part of the work of the Supplementary Engagement, PYPUN-KD as instructed by the BO Team carried out site inspections on a roughly weekly basis with the aim to addressing public concern on the safety of the completed EWL slab. To date, inspections were carried out on 23, 29 August, 5, 12, 20, 26 September and 5, 10, 18, 26 October, and 1, 7 November 2018.

Other defective works under Contract 1112

(1) Stitch joints of EWL Trough and NSL Tunnels at interface between Contracts 1111 & 1112 and stitch joints of NSL Tunnels within Contract 1112

48. As to the 'Report of Defective Works Identified at Tunnel Stitch Joints at Contract 1112, Shatin to Central Link' dated 26 March 2018 enclosed with MTRCL's letter dated 27 March 2018 to the RDO [**Bundle A1/184**], construction non-conformity of stitch joints were found during a water leakage investigation. According to this report, the cause of the non-conformity was that the re-bars were not properly connected to the adjacent trough/tunnel structure.
49. PYPUN-KD's monitoring team carried out site visits on 14 and 19 March 2018, which revealed that the non-conformity had no impact on public safety.
50. A further site visit was carried out jointly by the RDO, MTRCL and PYPUN-KD on 27 March 2018. **Annex 10** hereto is a photo record document of the site visit of 27 March 2018.

(2) Poor Concrete Quality at soffit of EWL Slab between Grid Lines 22-27, 29-32 & 34-39

51. As reported by MTRCL during a Project Steering Committee meeting of 28 August 2018, it was discovered that there was poor concrete quality at the soffit of EWL Slab between Grid Lines 22-27, 29-32 & 34-39.

52. PYPUN-KD's monitoring team carried out a joint site visit with the RDO and MTRCL on 30 August 2018 and further joint site visits were carried out by the RDO, MTRCL and PYPUN-KD's BSRC Team on 29 August and 5 September 2018. **Annex 11** hereto is a photo record document of the site visit of 29 August 2018
53. During these site visits, concrete honeycombs, cavities and concrete cover delamination were noted at the soffit of the EWL Slab at the above-mentioned areas, which are related to construction quality and structural safety issues.
- (3) Water dripping at EWL Slab near Grid Lines 22, 29 & 34 and improper infill for gap between column/wall and soffit of EWL Slab
54. PYPUN-KD understand from the RDO that MTRCL reported in September 2018 that there was water dripping at EWL Slab near Grid Lines 22, 29 & 34 and improper infill for the gap between column/wall and soffit of EWL Slab.
55. A site visit was carried out jointly by the RDO, MTRCL and PYPUN-KD's BSRC team on 27 September 2018, and the following were noted:
- 55.1 Water dripping from soffit of EWL Slab near Grid Lines 22, 29 & 34, but the source of water could not be identified.
- 55.2 Gaps between soffit of EWL Slab and the supporting column at Grid Line 32 & L2.
- 55.3 Gaps between soffit of EWL Slab and some structural walls were found filled with the materials such as expansion foam and broken concrete pieces, which under normal construction practice are not proper or sound materials for filling gaps between structural elements/members.
56. PYPUN-KD's BSRC team was involved in the preparation of a site visit report, which as at the date of this statement is not yet complete.

Request 3 – Alleged Change of Connection Details between EWL Slab and East Diaphragm Walls

(a) Explain and confirm whether Your Company and Your Company's staff have any knowledge on the change of connection details between EWL Slab and east diaphragm walls. If yes, provide detailed particulars. If no, explain why not.

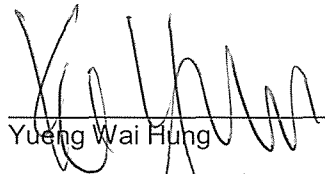
57. So far as I am aware, during the construction period PYPUN-KD and its staff had no knowledge on the change of connection details between EWL Slab and east diaphragm walls.
58. As noted above, PYPUN-KD's work on monitoring and verification focused on cost, programme and public safety aspects, and shall not be required to carry out site supervision (paragraph 4.2 of the Brief).

59. PYPUN-KD vetted and recommended to the BO Team approval of the designs at Figures 4 and 5 of the report by Tony Gee and Partners (Asia) Ltd dated 16 September 2018 [**Bundle H14/35284 and 35285**]. Figure 8 [**Bundle H14/35289**] is a simplified version of Figure 5. PYPUN-KD was not aware of the 'revised reinforcement arrangement' shown in Figure 9 [**Bundle H14/35289**] and did not receive documents on a design amendment for this alleged change of connection details between EWL Slab and east diaphragm walls. If the RDO / BD wanted PYPUN-KD to consider this design amendment (if they had known of it at the time), they could have instructed PYPUN-KD to do so. The second page of Annex 5 hereto is a sample instruction in respect of another matter.

(b) Explain and confirm whether Your Company has any knowledge of the actual as-built connection details between EWL Slab and east diaphragm walls. If yes, provide detailed particulars. If no, explain why not.

60. As far as I am aware, during the construction period PYPUN-KD had no knowledge of the actual as-built connection details between EWL Slab and east diaphragm walls. PYPUN-KD also did not receive any as-built drawings in relation to the actual as-built connection details between EWL Slab and east diaphragm walls.

Signed:


Yueng Wai Hung

Date:

13 NOV 2018

IN THE MATTER OF
THE 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

WITNESS STATEMENT OF YUENG WAI HUNG

Dated the 13th day of November 2018

MinterEllison LLP
Solicitors for PYPUN-KD & Associates Limited
Level 25 One Pacific Place
88 Queensway
Hong Kong
Tel : 2841 6888
Fax : 2810 0235
Ref: MTC/1220650

IN THE MATTER OF
 THE 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 WITNESS STATEMENT OF YUENG WAI HUNG DATED 13 NOVEMBER 2018**

<u>Page</u>	<u>Paragraph</u>	<u>Content</u>
K1/728	12	<p>Replace</p> <p><i>'As to the focus areas of the site and audit inspections listed on the first half of page 28, these are as provided in the BD's Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers ('PNAPs') ADM-13 and ADM-18 (Annex 2 hereto), that is, they are the matters of inspection the BD would carry out for a private sector building project, on the understanding that the employer/developer would properly carry out their duties under the Buildings Ordinance statutory regime.'</i></p> <p>with</p> <p><i>'As to the focus areas of the site and audit inspections listed on the first half of page 28, these are as provided in the BD's Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers ('PNAPs') ADM-13 and ADM-18 (Annex 2 hereto), that is, they are the matters of inspection the BD would carry out for a private sector building project, on the understanding that the employer/developer <u>Authorised Person, Registered Structural Engineer, Registered Geotechnical Engineer and Registered Contractor appointed for the project</u> would properly carry out their duties under the Buildings Ordinance statutory regime.'</i></p>
K1/735	29.2(4)	Replace

		<p><i>'In respect of Contract 1112, the BSRC Team carried out one site inspection, on 21 January 2014 of trial excavation for diaphragm walls – PYPUN-KD cannot now locate a copy of the inspection report.'</i></p> <p>with</p> <p><i>'In respect of <u>diaphragm walls for</u> Contract 1112, the BSRC Team carried out one site inspection, on 21 January 2014 of trial excavation for diaphragm walls – PYPUN-KD cannot now locate a copy of the inspection report.'</i></p>
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IN THE MATTER OF
THE 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 WITNESS STATEMENT OF YUENG WAI HUNG DATED
13 NOVEMBER 2018**

Dated the 11th day of December 2018

MinterEllison LLP
Solicitors for PYPUN-KD & Associates Limited
Level 25 One Pacific Place
88 Queensway
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Fax : 2810 0235
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