

**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**

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**WITNESS STATEMENT OF WONG CHI CHIU  
FOR  
MTR CORPORATION LIMITED**

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I, **WONG CHI CHIU**, of MTR Corporation Limited, MTR Headquarters Building, Telford Plaza, 33 Wai Yip Street, Kowloon Bay, Hong Kong, **WILL SAY AS FOLLOWS:**

1. I am a Site Representative in the Property Division of MTR Corporation Limited (“**MTRCL**”).
2. I first joined MTRCL in September 2010 as an Assistant Inspector of Works (Civil) for the Express Rail Link (“**XRL**”), and I remained in that position until May 2013. From June 2013 to October 2015, I was an Inspector of Works (Civil) (“**IOW**”) for Contract 1112 on the Shatin to Central Link Project (“**SCL Project**”), and from November 2015 to March 2018, I was a Senior Inspector of Works II (Civil) (“**SIOW II**”) for Contract 1112 on the SCL Project.
3. I am currently a Site Representative in MTRCL’s Property Division, and I have been in this role since April 2018.
4. I obtained a Higher Certificate in Civil Engineering from the Hong Kong Institute of Vocational Education in 2002, and in 2012 I obtained a bachelor’s degree in Civil Engineering from the Leeds Metropolitan University, UK.
5. I am providing this witness statement in response to various matters raised in a letter dated 27 July 2018 from Lo & Lo, Solicitors, (who I understand are the solicitors acting for the Commission of Inquiry into the Diaphragm Wall and Platform Slab Construction Works at the Hung Hom Station Extension under the SCL Project (“**Commission of Inquiry**”)). The matters raised in the said letter (“**Letter**”) which I

will deal with in this witness statement are those listed as items 3, 4, 5, 6, 7, 8(a)-(h), 11(a), 11(g)-(r), 12(a)-(e) and 13(b) of the Letter.

6. While I am aware of the matters raised in items 3, 4, 5, 6, 7, 8(a)-(h), 11(a), 11(g)-(r), 12(a)-(e) and 13(b) of the Letter based on my first-hand observations and personal involvement in the SCL Project from June 2013 to March 2018, and I confirm that the contents of this statement are true to the best of my knowledge and belief, there are occasions when I:

6.1. Can only speak to matters by reference to MTRCL's documents; and/or

6.2. Have to defer to my colleagues who will be providing witness statements in this Inquiry for the details of various matters since these colleagues were involved in the management and administration of the SCL Project and are more familiar in respect of such matters.

7. In the paragraphs to follow, I will provide my response, observations and comments in respect of each of items 3, 4, 5, 6, 7, 8(a)-(h), 11(a), 11(g)-(r), 12(a)-(e) and 13(b) of the Letter.

**Item 3: With reference to an Organisation Chart of Your Company, describe and explain the roles and responsibilities of each person in Your Company involved in the construction, quality control, supervision, monitoring, inspection of the diaphragm walls and the platform slabs and the steel bars and steel bar structures within the diaphragm walls and the platform slabs.**

8. I understand that other witnesses for MTRCL will be speaking in detail to the roles and responsibilities of various staff members involved in the design and construction of the diaphragm walls and the platform slabs (particularly the East West Line ("EWL") slab). It is therefore unnecessary for me to repeat that evidence in this witness statement.
9. Nevertheless, it would be appropriate for me to comment on the division of labour within the two IOW (Civil) teams for Contract 1112 on the SCL Project.
10. As at October 2013:

10.1. The first IOW team was led by Mr Dick Kung as the Senior Inspector of Works ("SIOW"), who was generally responsible for both the Hung Hom Station area

(“**HUH**”) and the Hung Hom Siding (“**HHS**”). Mr Kung led a team consisting of (amongst others) Mr Leung Wai Wah and Mr Wan Yiu Wing who were responsible for the pre-bored socket H-piles, and myself and Mr Tommy Leong who were responsible for the construction of the diaphragm walls.

10.2. The second IOW team was led by Mr Pedro So who was the SLOW responsible for the North Approach Tunnel (“**NAT**”), South Approach Tunnel (“**SAT**”) and the concourse, and his team consisted of (amongst others) Mr Tony Tang who was the IOW responsible for the NAT and Mr Jacky Lui who was the IOW responsible for the SAT. I cannot remember the division of labour amongst other members of Mr Pedro So’s team.

11. As at January 2015:

11.1. The first IOW team was still being led by Mr Dick Kung who was the SLOW responsible for the HUH and the concourse. I was the IOW responsible for the substructure and underpinning works, and Mr Joe Wong was the IOW responsible for the underpinning and excavation works. Mr Tommy Leong (Assistant Inspector of Works (“**AHOW**”)) and Mr Henry Chan (Works Supervisor) were responsible for the diaphragm walls (including the rebar cages in various locations of the diaphragm walls). Mr Terence Wong and Mr William Chan were the AHOWs responsible for the concourse. Ms Wing Ho was the Works Supervisor responsible for diaphragm wall remedial works (e.g. pressure grouting after the coring works on the surface of the diaphragm walls had been carried out).

11.2. The second IOW team was again led by Mr Pedro So as the SLOW responsible for the NAT, SAT and HHS. Mr Tony Tang was the IOW responsible for the NAT, Mr Ip Wing Fat was the IOW responsible for the SAT and the International Mail Centre (IMC) area, and Mr Victor Tung (HOW), Mr Daniel Cheung (AHOW) and Mr Ryan Tam (Works Supervisor) were responsible for the HHS and other ancillary works.

12. Mr Dick Kung (SLOW) left the SCL Project in October 2015, such that a slight reshuffle took place. Mr Pedro So became the overall SLOW, and he led a team consisting of myself (HOW for the HUH, NAT and parts of SAT), Mr Victor Tung

(IOW for the HHS and SAT), Mr Tony Tang (IOW for the NAT), Mr Wan Yiu Wing (AIOW for the NAT), Mr Joe Wong (IOW for Areas C2/C3 of the EWL slab and underpinning works), Mr Tommy Leong (AIOW for Areas B/C1/C2/C3 of the EWL slab), Mr Andy Wong (AIOW for Areas C2/C3 and HUH/concourse), Mr Henry Chan (Works Supervisor for Areas A/HKC of the EWL slab, and underpinning works), and Ms Wing Ho (Works Supervisor for parts of the SAT and Area A2, and underpinning works).

13. In November 2015, I was promoted to the position of SIOW II, as was Mr Victor Tung, and the two of us reported directly to Mr Pedro So who continued in his role as SIOW. Mr Kenneth Kong later took over from Mr Pedro So as the SIOW. Most of the other IOWs/AIOWs/Works Supervisors referred to above continued to be involved in the IOW teams for the remainder of the EWL slab works (i.e. until mid-August 2016), although the division of labour within the teams changed from time to time depending on the state of the works on site.

**Item 4: Identify the type of work and duties undertaken by such managers, supervisors and inspectors.**

14. I shall briefly explain the types of work and duties of the IOW teams for Contract 1112 on the SCL Project.
15. Mr Tommy Leong, Mr Henry Chan and I were responsible for conducting site surveillance<sup>1</sup> and inspections in respect of the construction of the diaphragm walls. As IOWs and Works Supervisors, our roles included carrying out site surveillance in respect of the works on a daily basis, keeping a site diary (which the IOWs, AIOWs and/or Works Supervisors would use to record site works information by typing such information into a single site diary computer document, following which a colleague would collate and consolidate that document), and monitoring site safety and site labour resources/activities. Most importantly, we carried out inspections and signed off the Request for Inspection / Survey Check (“RISC”) forms for those inspections (except the RISC forms for e.g. rebar fixing in the EWL slab, which was inspected and

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<sup>1</sup> See PIMS/PN/11-4/A5, 'Monitoring of Site Works', paragraph 5.7.1: 'Site surveillance is to be carried out by site inspectorate teams to monitor day-to-day site works of the Contractor. The intention is to have site issues identified early for prompt remedial action by the Contractor, in additional [sic] to and prior to the formal inspection of the Works [...]'.  
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signed off by the Construction Engineers (“**ConE**”)) upon being requested by the main contractor, Leighton Contractors (Asia) Ltd (“**LCAL**”), to inspect the relevant works.

16. The division of labour among the different IOWs, AIOWs and Works Supervisors was largely determined by reference to different areas of the works. The IOWs were on site every day for most of the time, and we all took site photos every day. Many (though not all) of these site photos were uploaded onto MTRCL’s project server.
17. Under the relevant Site Supervision Plans (“**SSP**”) submitted to the Buildings Department (“**BD**”), I was assigned as a T3 site supervisor under the Registered Geotechnical Engineer (“**RGE**”) stream. This was initially for the diaphragm wall construction (e.g. under the SSP submitted by MTRCL on 29 August 2013 and accepted by the BD on 2 September 2013), and later for the substructure for EWL track level and excavation and lateral support (“**ELS**”) works (e.g. under the SSP submitted by MTRCL on 18 June 2015 and accepted by the BD on 6 August 2015).
18. To be clear, as far as I am aware, I was never assigned a role under the Competent Person (“**CP**”) stream by MTRCL within any of the SSPs submitted to the BD. For the purposes of the diaphragm wall, EWL slab and ELS works, I have always been a T3 site supervisor under the RGE stream.
19. In terms of the record of specific tasks performed by me as a T3 site supervisor for the ELS works which I have filled in and signed, these were mainly for the checking of site safety issues. I understand that the requirement to complete these records was part of the BD’s approval of the works and the checklist of duties as set out in the Code of Practice for Site Supervision 2009 and the Technical Memorandum for Supervision Plans 2009.
20. Even though I was not part of the CP stream under any SSP, my role as an IOW during the construction of the diaphragm walls was (after the excavation of each panel by a grab and trench cutter under a bentonite slurry) to inspect each pre-fabricated steel rebar cage, and then inspect the installation of the rebar cages into the bentonite-filled trench. This included the site surveillance and inspection of the splicing assemblies between rebar cages using BOSA Type B connections. This was because the IOWs were on site every day and, in fact, the SIOw specifically assigned the IOWs under him, including myself, to conduct such site surveillance and inspection works.

21. Accordingly, when it subsequently came to the EWL slab, the ConEs were responsible for inspecting the rebar fixing works and signing off the final product on the RISC forms as part of the quality control process, whereas the other IOWs and I monitored site safety and generally looked at the quality of the EWL slab works on site (including the rebar fixing and the coupler splicing works, formwork and concrete pouring) on a day-to-day basis.
22. In order to properly discharge my duties as an IOW on the SCL Project, I recall attending a briefing session on site on or around 2 October 2013. This session was led by Mr Dick Kung (SIOW) and a BOSA representative, Mr Paul Lam, and briefed the attendees (including MTRCL's IOWs, Works Supervisors and ConEs, and also representatives from LCAL and Intrafor Hong Kong Limited ("Intrafor")) on the installation and inspection of BOSA couplers. This training session is confirmed by a contemporaneous training record sheet – although I note that I have omitted to sign the record sheet (either by oversight or because I arrived at the session late), I can confirm that I did in fact attend this training session.
23. As IOWs, we were on site for a substantial amount of time and looked at everything from site safety, labour resources, to quality matters. In order to save time and for convenience, I would not normally wait for or ask the SIOW or ConEs to deal with problems observed on site. Instead, I dealt with the problems with LCAL's supervisors on the spot whenever possible.

**Item 5: Describe and explain the steps, procedures and timeline in the construction and completion of the steel fixing works in the diaphragm walls and platform slabs. With reference to the said steps, procedures and timeline, please describe and explain the respective roles and involvement of the Government, Your Company, Leighton, Fang Sheung, Intrafor and China Technology and elaborate on the interaction and relationship between Your Company and these parties on site and on a day-to-day working basis.**

24. From approximately July 2013 to August 2016, the diaphragm walls and EWL slab were being constructed. In broad terms, I would summarise the construction and inspection sequence of the diaphragm walls as follows:
  - 24.1. After the excavation of each panel by a grab and trench cutter down to the requisite depth under a bentonite slurry in accordance with the relevant steps under LCAL's Construction Method Statement for Diaphragm Walls and Barrette

Construction (Ref: H2601-MDS-LCA-CON-017-03) (“**Method Statement for Diaphragm Walls**”), LCAL/Intrafor would proceed to the fixing of the rebar cages and the installation of the rebar cages into the trenches. The bentonite slurry is maintained in the trench throughout the construction to support the trench sides so as to prevent any lateral movement.

24.2. The vertical length of a rebar cage was typically up to around 4 metres, depending on the location of the relevant panel. Upon completion of the pre-fabrication of the rebar cages for each diaphragm wall panel by the steel fixing sub-sub-contractor in the rebar yard, and upon LCAL’s request, I (or the SIO or another AIO or Works Supervisor) would inspect the rebar cages to check that they complied with the shop drawings provided by LCAL/Intrafor and the Method Statement for Diaphragm Walls (in particular, section 6.10.1 therein). I would normally inspect (amongst other things):

24.2.1. The quantity, diameters and spacing of the rebars used;

24.2.2. The steel pipes for rock fissure grout, shear pins and sonic testing of the rebar cages;

24.2.3. The shear links;

24.2.4. The main rebars; and

24.2.5. The quantity of cast-in couplers and/or spacing of bend-out rebars.

24.3. Upon my inspection and permission, LCAL/Intrafor would then proceed to the next step in the construction sequence, i.e. the installation of the rebar cages into the trench. For the panels that I inspected, I would inspect the installation process for each panel, which consisted of the lowering of each rebar cage into the bentonite-filled trench, and connecting each rebar cage to the rebar cage in the layer below using mechanical couplers. Each rebar cage which was fixed and installed had to be inspected by an IO or AIO or Works Supervisor before the next layer of rebar cage could be installed above it.

24.4. As a matter of sequence, the installation of the pre-fabricated rebar cages into the trenches started with the rebar cage at the bottom of the trench, and then

proceeded to the next layers of rebar cages from the bottom upwards. Each new layer of rebar cage had to be fixed to the layer below with couplers using Type B connections<sup>2</sup>, and it was necessary to inspect and check the shear links and the coupler splicing assemblies based on the document entitled '*Quality Supervision Plan on Enhanced Site Supervision & Independent Audit Checking By MTRC & RC for Installation of Couplers (Type II – SEISPLICE Standard Ductility Coupler)*' ("QSP") (as prepared by LCAL/BOSA and submitted by MTRCL to the BD on 12 August 2013).

24.5. Before inspection took place as requested under a RISC form, the IOWs/AIOWs/Works Supervisors might also be present as part of their routine site surveillance when the pre-fabrication of the steel rebar cages was being carried out. However, we would not carry out a full inspection of the works that were still in progress at that stage (e.g. halfway through the fixing of a rebar cage) or raise any queries with LCAL's supervisors, unless we identified any major non-conformances, or more importantly, any safety concerns.

24.6. LCAL's engineer/sub-agent/site agent (e.g. site agent Mr Ian Chik, sub-agent Mr Kobe Law, or graduate engineers Mr Edward Mok or Mr Ryan Kow) would normally inform me (or another IOW/AIOW/Works Supervisor) that the pre-fabricated rebar cages for a panel were ready for inspection by submitting a RISC form. For each panel, after I had inspected the pre-fabricated rebar cages, the said LCAL staff would phone me again at a later stage when the installation process was ready to commence, and ask me to return to inspect the installation of those rebar cages, whereupon I did so.

24.7. The inspection of the rebar cages upon pre-fabrication and when they were being installed usually occurred on separate occasions, albeit those inspections tended to follow each other closely. In terms of time, the connection of three steel rebar cages (i.e. the completion of two Type B connections) can typically be completed within one day. The installation of each rebar cage into the bentonite-filled trench and its connection to the next steel rebar cage took one hour on average.

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<sup>2</sup> See paragraph 28.2 below.



25. Upon completion of all the diaphragm walls (including shear keys and the preparation of the surface of the construction joint) and the erection of formwork, LCAL proceeded to the EWL slab works as follows:
- 25.1. The rebars for the EWL slab were fixed layer by layer from the bottom to the top of the slab, typically using Type A connections<sup>3</sup> for splicing between the slab and the diaphragm walls and between adjoining bays of the slab.
- 25.2. In respect of rebar fixing, LCAL submitted a single RISC form covering the top and bottom layers of a bay. As far as I understand from the ConEs, typically, LCAL would request MTRCL's ConE to inspect the bottom layer at an early stage, and then the ConE would subsequently return (upon LCAL's further notification) to inspect the top layer once it was complete. The SIOW was the person who received the RISC forms for the rebar fixing works, but he would usually pass the forms to the ConEs who were the ones to carry out the actual inspections.
- 25.3. The pre-pour check involved inspecting the bay for cleanliness and debris, inspecting the cast-in items, and checking that the formwork and temporary works were all in accordance with the temporary works/formwork design. Upon a satisfactory pre-pour check, LCAL would instruct China Technology Corporation Limited ("China Technology") to proceed to pour the concrete in the relevant bay of the EWL slab.
26. When carrying out the above site surveillance and/or inspection activities, the IOWs/AIOWs/Works Supervisors were conscious of and relied on LCAL's obligation to provide 100% site supervision of all the works. . Although we did carry out site surveillance daily and inspected the works when requested by LCAL in accordance with the QSP and SSPs, we were not expected to scrutinise each and every single work activity carried out and follow each and every construction worker on site.

**Item 6: Explain with reference to the terms of Contract 1112, sub-contract(s), approved plans, drawings, laws and regulations, practice notes, handbooks, guidelines, circulars, industry standards, practice and requirements (the "Requirements, Standards and Practice"), how the steel bars in the diaphragm walls and platform slabs should be**

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<sup>3</sup> See paragraph 28.1 below.

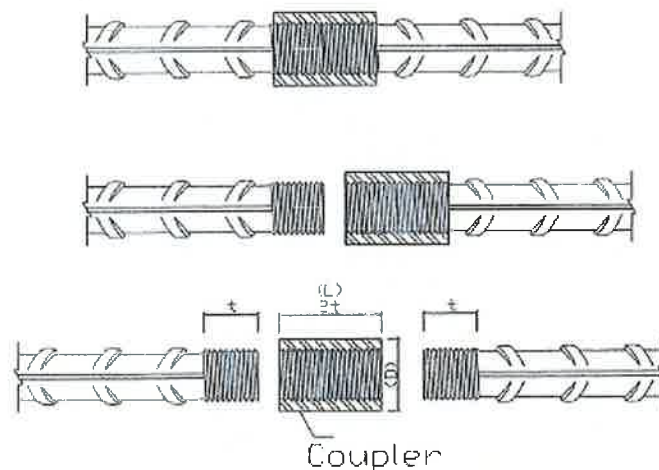
**installed and connected to ensure the compliance, quality, safety and integrity of the structures.**

27. For the rebar cages in the diaphragm walls, “worker’s steel bars” (colloquially known as “師傅鐵”) were used to temporarily hold the main rebars in place and to ensure the spacing and alignment were correct, and u-bolts were used to fix the connections between the main rebars and the “worker’s steel bars”. Whilst the “worker’s steel bars” were not shown on the shop drawings, it is common industry practice to use them to ensure the measurements and dimensions of the steel rebar cages are accurate. If there was any vertical misalignment of steel bars between cages (which was not uncommon), the workers would have to loosen the u-bolts in order to re-align the problematic rebars and ensure a good fit of the rebars.

28. The couplers had to be installed in accordance with the QSP. In essence:

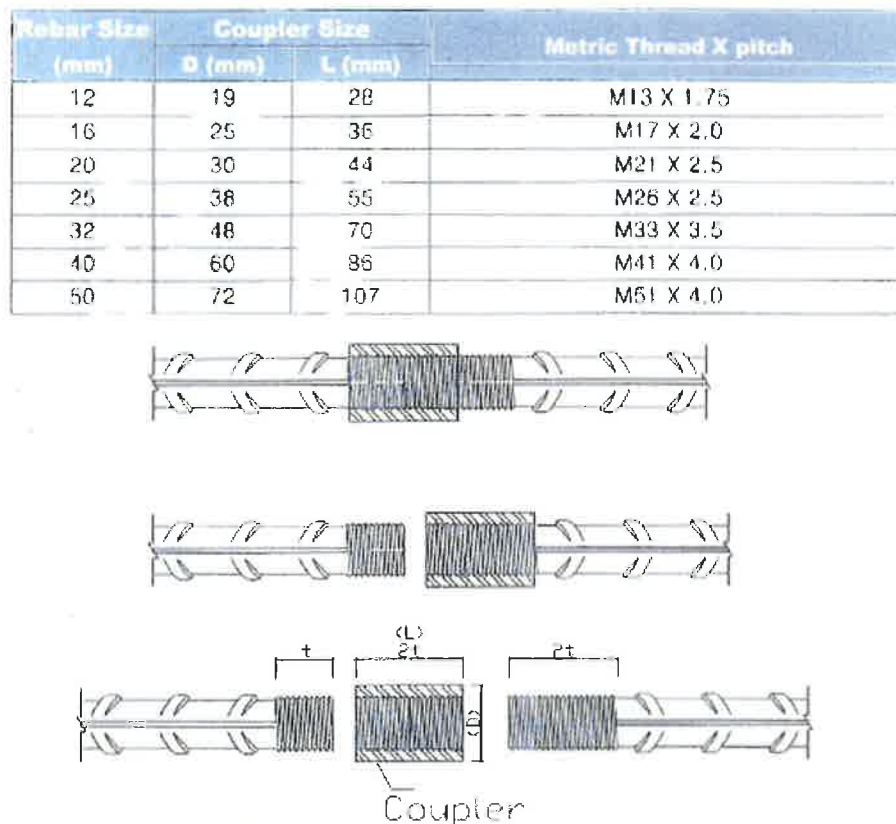
28.1. For Type A connections, the rebar itself is rotated and screwed into a coupler fixed to another rebar. The length of the threaded end of a Type A rebar has to be half of the length of the coupler – see the extract from BOSA’s coupler specification in **image 1** below.

Rebar Size (mm)	Coupler Size		Metric Thread X pitch
	D (mm)	L (mm)	
12	19	28	M13 X 1.75
16	25	36	M17 X 2.0
20	30	44	M21 X 2.5
25	38	55	M26 X 2.5
32	48	70	M33 X 3.5
40	60	86	M41 X 4.0
50	72	107	M51 X 4.0



**Image 1 – BOSA SERVISPlice Normal Standard Splice – Type ‘A’ Dimensions**

28.2. For Type B connections, the couplers completely screwed into the threaded end of the rebars of one cage would, after the cage had been properly aligned with another cage, be rotated and screwed into the threaded end of the rebars of the other cage below, so as to connect the two separate rebar cages. Unlike Type A rebars, the length of the threaded end of a Type B rebar has to be the same as the length of the coupler – again, see the extract from BOSA’s coupler specification in **image 2** below.



**Image 2 – BOSA SERVISPLICE Normal Standard Splice – Type ‘B’ Dimensions**

28.3. For the EWL slab rebar fixing works, for instance, the workers of Fang Sheung Construction Limited (“**Fang Sheung**”) would normally insert a Type A rebar into a coupler by hand to ensure proper alignment, and then use a pipe wrench to screw the rebar fully into the coupler. For the construction of the diaphragm walls, Intrafor would do the same with the Type B rebars and couplers.

29. For the steel rebar cages of the diaphragm walls which were connected using Type B connections, I would normally check the splicing assemblies by measuring the exposed Type B threading, which should not be more than half of the full length of the threaded end as specified in the QSP (see **image 3** below). Further, once a new layer of rebar

cage had been lowered into the trench, I frequently asked the workers (by way of random spot-checking) to unscrew the couplers connecting the bottom of that rebar cage with the top of the rebar cage already in the layer immediately below, so as to confirm that the length and alignment of the threaded ends of the rebars screwed into the couplers conformed to the requirements under the QSP. This was to minimise the risk of non-conformances in the splicing assemblies throughout the installation process.



**Image 3 – measurement of exposed threading of Type B rebars in diaphragm wall in Area C2-3.**

30. When the IOWs, AIOWs and I conducted site surveillance of the EWL slab works, we would pay attention to whether the Type A splicing assemblies were within the tolerance of not more than 1 to 1.5 full pitches of threading being exposed, as per the footnote in the template record sheet in Appendix B to the QSP. We did so by counting the crests (i.e. not the roots) of the threaded end. I should emphasise that there was no need to use a pipe wrench for the inspection, and no specific torque was required – this was clearly and expressly stated in the BOSA '*Coupler Installation Method*' document. A visual inspection (with the help of a tape measure to measure the length of the threaded end) was sufficient for an experienced inspector like myself (see **image 4 below**), and it would not be necessary to use any special equipment.



Image 4 – random checking of Type A threaded rebar (Y40) for 3m EWL slab in Area C1-1.

31. For the diaphragm wall panels and EWL slab bays in respect of which I conducted site surveillance, I looked at and/or measured the rebars and couplers up close. I did not and could not have done so from a long distance.

**Item 7: Describe and explain Your Company's system and measures in place at the material time to ensure that the steel bars in the diaphragm walls and platform slabs were properly installed and connected in compliance with Requirements, Standards and Practice and that any irregularities, non-compliances and defects will be reported and addressed by the appropriate parties and/or persons.**

(i) RISC forms

32. The LCAL personnel involved in the RISC form inspections included (amongst others):
  - 32.1. Area A – sub-agent Mr Calvin Wong and senior engineer Mr Nigel Ho.
  - 32.2. Area B – sub-agent Mr Patrick Chan.
  - 32.3. Areas C1 to C3 – sub-agent Mr Andy Ip, site agent Mr Joe Leung, engineer Ms Sasa Leung, assistant engineer Mr Man Sze Ho, and graduate engineer Mr Edward Mok.
33. Upon Intrafor's notification to LCAL that Intrafor's works were ready for inspection, LCAL would submit a four-ply RISC form (i.e. in four layers of white, pink, yellow



and blue respectively) together with attachments by hand to MTRCL, and that form usually contained printing or handwriting by LCAL's staff (e.g. site agent Mr Ian Chik, sub-agent Mr Kobe Law, or graduate engineers Mr Edward Mok or Mr Ryan Kow).

34. The RISC form would typically be registered by MTRCL's administrative staff and then passed on to the relevant IOW/ConE for carrying out the inspection as requested. LCAL would keep one carbon copy of the form, one carbon copy would be handed to the responsible inspectorate staff (IOW, AIOW or ConE), and the SIOW would receive the other two copies, both of which would later also be handed to the responsible inspectorate staff.
35. Typically, the IOW or ConE receiving the RISC form from the SIOW would carry out the inspection on the date and at the time stated, fill out Part C of the form (i.e. indicate whether permission was granted to proceed to the next stage) and sign on all three copies, before returning all three copies to the SIOW for endorsement.
36. Ultimately, the three copies of the RISC form submitted to MTRCL would be returned to LCAL, who would keep the original copy (the top layer in white) together with all attachments, and send the other two carbon copies back to MTRCL for filing at the site office. LCAL's staff would also scan the RISC form and attachments onto the ePMS.
37. When inspecting the rebar cages for the diaphragm walls, I (or another IOW/AIOW/Works Supervisor) would typically check and countersign the LCAL/Intrafor shop drawings. Intrafor has kept one set of these shop drawings. The shop drawings recorded the signatures for each and every rebar cage in the diaphragm walls, and I would only countersign on the shop drawing if all previous rebar cages had been properly signed off.
38. My colleagues followed the same practice, in order to ensure that the shop drawings for the diaphragm walls were properly countersigned upon inspection. These shop drawings had previously been submitted to the BD as part of the as-built records. As a matter of fact, each and every panel of the diaphragm walls was covered by a RISC form and/or a countersigned shop drawing. I am therefore certain that all the rebar cages and diaphragm wall panels were properly inspected by MTRCL.

39. In order not to hold up the progress of the works, there were occasions when we were asked by LCAL's site agents or engineers (Mr Ian Chik, Mr Kobe Law, Mr Edward Mok or Mr Ryan Kow) on site to carry out an inspection on the spot before a RISC form arrived, on the assurance that LCAL had already submitted the form. There were also occasions when inspections took place on site and permission was given verbally in order to allow LCAL to proceed to the next stage of the works, again on the assurance that LCAL would subsequently submit a RISC form for endorsement. We relied on LCAL's assurances at the time as we appreciated that the processing of the RISC forms took time, and we tried to adopt a pragmatic approach whenever possible to avoid unnecessary delays to the works.
40. As far as I am aware, there were no circumstances where the works proceeded beyond a hold point without any prior inspection/permission from MTRCL.

(ii) Quality control supervision of couplers

41. LCAL had far more site supervisors on site than MTRCL, as it was LCAL's responsibility under the QSP and the relevant SSPs to provide 100% supervision for the coupler installations (with LCAL's own T1 to T4 site supervisors under the Registered Contractor ("RC") stream).
42. There were quality control supervisors' record sheets as per the QSP format ("**Record Sheets**") for the couplers in the diaphragm walls, and they formed part of the log book kept on site by Intrafor. In fact, I was specifically briefed and instructed by Mr Dick Kung (SIOW) prior to the commencement of the works to supervise and inspect the couplers in the diaphragm walls, and to countersign at least 20% of the Record Sheets which were prepared and signed by LCAL as per the QSP with respect to the steel rebar cages in the diaphragm walls.
43. I understand that LCAL has kept a soft copy of all the Record Sheets (including the ones I have countersigned) on its server, which I have previously seen at LCAL's site office. Hard copies of these Record Sheets were also kept in Intrafor's container on site, but I understand that those hard copies were lost when Intrafor's container was removed from the site after the completion of the diaphragm walls.

44. For the purposes of reporting completion of the diaphragm walls to the BD, the Record Sheets need not be submitted, and it was only necessary to submit an inspection record summary (signed by LCAL's authorised signatory and T4 site supervisor, and MTRCL's Competent Person and T4 site supervisor) confirming based on the Record Sheets kept on site that the coupler installations were satisfactory.
45. When it came to the EWL slab, I understood from the SLOW at that time, Mr Dick Kung, that the ConEs were responsible for the inspection of the rebar fixing works and for signing off the relevant RISC forms. In practice, the other IOWs, ALOWs, Works Supervisors and I continued to carry out site surveillance in respect of the works generally (which included, among other things, the coupler splicing assemblies) on a day-to-day basis, as we were on site full-time every day.
46. However, unlike for the diaphragm walls, Record Sheets of the coupler splicing assemblies were not prepared or maintained contemporaneously by LCAL for the EWL slab. After China Technology's email to LCAL (which was subsequently forwarded to MTRCL) in January 2017 which alleged that they had '*found plenty of records concerning malpractice use [sic] of coupler in this project SCL 1112*', an internal quality assurance and quality control review of the steel reinforcement and coupler installation ("**Internal Review**") was carried out by MTRCL in or around January/February 2017. As far as I recall, Mr Carl Wu (Co-ordination Manager), Mr Peter Fung (Senior Quality Assurance Engineer), Mr James Ho (SConE) and Mr Jeff Cheung (ConE I) were involved in this Internal Review.
47. During the course of the Internal Review in 2017, Mr James Ho asked me and Mr Jeff Cheung if there were any records as per the QSP, including Record Sheets for the coupler installation in the EWL slab. After Mr Ho's enquiry, I proceeded to ask LCAL to obtain the relevant records, which were not in MTRCL's possession. In fact, I have recently reviewed the BOSA technician/steel-fixers' training records and quality control thread preparation records for the EWL slab at LCAL's site office, after the media reports in late May 2018 regarding allegations of defective steelworks under Contract 1112.
48. My understanding at the time of the Internal Review was that (as with the diaphragm walls) LCAL had to prepare and maintain the Record Sheets for MTRCL to



countersign, and so I asked LCAL where those Record Sheets were, but no such Record Sheets were ever provided to me.

49. After the first media report in late May 2018 regarding allegations of defective steel works under Contract 1112, various MTRCL members of staff (including Mr James Ho, Mr Derek Ma, Mr Louis Kwan, Mr Arthur Wang and myself) began to gather evidence in response to what had been alleged in the media report, and I assisted with collecting and collating the relevant site photos from MTRCL's project server. Other than collating and providing some relevant site photos, I had no involvement at all in the preparation and drafting of the MTRCL report dated 15 June 2018.
50. Shortly thereafter, in or around early June 2018, I ran into LCAL's Mr Edward Mok and Ms Mini Lo and learned that they were preparing the Record Sheets for the EWL slab at that time. I naturally asked if they were willing to sign those Record Sheets, but they were adamant that they were not prepared to sign any retrospective Record Sheets after the event.
51. Within that same period, I remember that a Government representative came to MTRCL's Hung Hom site office to check MTRCL's internal records, and he asked Mr Arthur Wang whether there were any Record Sheets as per the QSP for the EWL slab. I was present during that conversation. I informed Mr Arthur Wang, and he told the Government representative, that there were no such Record Sheets, as LCAL had never produced any to MTRCL.
52. Afterwards, Mr James Ho told me that LCAL had by then retrospectively prepared a set of Record Sheets for the EWL slab, although I had not actually seen a physical copy at the time. He asked me whether I was willing to countersign those Record Sheets, and I vehemently said that I was not willing to do so in these circumstances when LCAL had failed to keep any contemporaneous Record Sheets as required by the QSP .
53. Furthermore, I distinctly remember raising the concern that I was only a T3 site supervisor for the ELS works, such that I did not consider myself to be the competent or appropriate person to sign the so-called Record Sheets retrospectively prepared and provided by LCAL.

54. Mr James Ho later followed up on this issue and asked if MTRCL had any internal records of our site surveillance in respect of the couplers in the EWL slab. I confirmed that I had conducted routine site surveillance in respect of more than 50% of the couplers in the EWL slab, but there were no written records as such. There was, however, a collection of site photos of the rebar fixing and coupler installation works taken during our routine site surveillance of the EWL slab works.
55. Having reviewed those site photos (which had been uploaded to the SCL Project server contemporaneously), I then compiled an Excel spreadsheet summarising the dates and locations of the photographs taken. A hard copy of that spreadsheet was provided to Mr James Ho for consideration, but he considered that the summary was not sufficiently detailed, and he asked if I was willing to prepare and sign a more detailed set of records. At that point, I was assured by Mr Ho that the proposed set of records would only act as an internal record. I understood this to mean that it was only for the use of myself, Mr Ho, Mr Derek Ma, Mr Louis Kwan and Mr Arthur Wang, and would not be circulated to any other parties.
56. Thereafter, I understand that Mr James Ho instructed Mr Derek Ma to prepare a first set of checklists entitled '*Checklist for On Site Assembly of EWL Slab to D-Wall/Slab Couplers*', a hard copy of which was printed out and handed to me at the Hung Hom site office. During the discussions with Mr Ho and Mr Ma, I understood from Mr Ma that the checklists prepared by him covered around 20% of the rebars/couplers installed on site. Above all, Mr Ma assured me once again that these checklists would only act as an internal retrospective record of my recollection not to be circulated to any parties outside our team of Mr Ho, Mr Ma, Mr Louis Kwan and Mr Arthur Wang.
57. During the same discussions, it was decided that the checklists should be dated with a date after the Internal Review, i.e. 10 February 2017, as these checklists were prepared with the intention of responding to and addressing the recommendations therein. As far as I was concerned, I was sure that those checklists could not and should not be dated back to 2015, as they were merely a retrospective internal record for the purpose of satisfying myself that we had carried out sufficient site surveillance in respect of the coupler installations.

58. To my mind, it was crucial that all the checklists were expressly marked as a '*retrospective record of coupler installation*' (as drafted by Mr Derek Ma). As Mr Ma explained when handing the draft checklists to me, these checklists were marked as '*retrospective*' because they were not contemporaneous records, and the checklists were never intended to form any part of the log book required by the QSP, given that the QSP required LCAL (and not MTRCL) to prepare, provide and maintain the log book containing the Record Sheets on site. It was for this same reason that I was unwilling to countersign the so-called Record Sheets retrospectively prepared and provided by LCAL.
59. Based on my memory of my site surveillance activities at the time, and having previously reviewed the site photos taken by myself and other IOWs/AIOWs/Works Supervisors, I was satisfied that we did carry out more than enough site surveillance covering the coupler installation works, and I proceeded to fill in those checklists. I did not check the numbers or drawings referred to in the checklists in detail, as Mr Derek Ma prepared the checklists and I relied on the information he had incorporated therein. Moreover, I was under the impression from Mr James Ho that he urgently required those checklists.
60. I have now retrieved a collection of the relevant site photos I had considered at the time of preparing the retrospective checklists. In respect of the photos which were taken by other IOWs/AIOWs, I can confirm that I did in fact direct those IOWs/AIOWs (e.g. Mr Tommy Leong) to look at the coupler installations when carrying out routine site surveillance in respect of the rebar fixing works for the EWL slab. As for the photos which I had personally taken, I can confirm that I also carried out routine site surveillance in respect of the coupler installations for the EWL slab in the areas/bays shown. In fact, once I was promoted to SLOW II in November 2015, I was responsible for all areas in the HUH, and I walked around and conducted site surveillance in respect of the entire site.
61. In the light of the above, I proceeded to sign the checklists on the basis that it would be a '*retrospective record of coupler installation*' as stated expressly on the face of the checklists, purely as an internal record. I cannot stress enough that I had no intention or awareness whatsoever that the checklists would ever be used or relied on by anyone other than myself, Mr James Ho, Mr Derek Ma, Mr Louis Kwan or Mr Arthur Wang, let

alone that the checklists would be appended to the MTRCL report dated 15 June 2018 and publicised. As mentioned above, other than collating and providing some relevant site photos, I had no involvement in the preparation and drafting of the MTRCL report.

62. Later on, Mr Derek Ma informed me of the specific requirement to inspect at least 50% of the couplers where the structure acts as a transfer plate. Mr Ma therefore produced a further set of checklists in hard copy and handed them to me. As before, I filled in and signed those checklists on the basis that the checklists would be an internal record for the use of myself, Mr James Ho, Mr Derek Ma, Mr Louis Kwan and/or Mr Arthur Wang, and without any intention that they would be used to satisfy the QSP or as an attachment to the MTRCL report dated 15 June 2018.
63. I kept a hard copy of these signed checklists on my old desk at the Hung Hom site office (although I had already been transferred to the Property Division by that time), in case the checklists were of any use to Mr James Ho, Mr Derek Ma, Mr Louis Kwan and/or Mr Arthur Wang internally. After the MTRCL report was published on 15 June 2018, I recall returning to the site office, but I was unable to find the hard copy checklists I had left at my desk.
64. As mentioned earlier, at the time of signing the checklists, I did not check them in great detail given the limited time available. I am now aware that the coupler checklists are not entirely accurate, as some of the diaphragm walls covered by the checklists did not in fact have any couplers in the top layer rebars as a result of a change in detailing from the use of couplers to through-bar lapping. Although I was definitely aware of this change in detailing at the time of the works, I unfortunately did not notice the inaccuracies within the checklists when signing them, until I was instructed to find and collate all site photos showing construction details of the east diaphragm wall, and was subsequently told that this was for the purpose of identifying parts of the diaphragm wall and cast-in couplers which had been trimmed away.
65. In any event, from my perspective as an IOW, the change from the use of couplers to through-bar lapping represents a better construction detail which minimises the risk of workmanship issues and/or non-conformances, as it reduces the number of steps in respect of the rebar fixing works at the joints between the diaphragm walls and the EWL slab. In fact, I recall confirming (at the time of the EWL slab works in or around

2015) with the SIOW, Mr Dick Kung, that the amended construction detail was acceptable, and he told me that it was.

**Item 8: Given the extensive public concern about the safety of the diaphragm walls and platform slabs and allegations that there might have been unlawful shortening, cutting or defective connection of the steel bars in the diaphragm walls and platform slabs ("Defective Steel Works"):**

- (a) Explain and confirm whether Your Company has any knowledge of the Defective Steel Works (whether undertaken by Leighton and/or its sub-contractors) and if so, identify and describe the relevant events and occasions. Please describe the defects, explain in what ways Requirements, Standards and Practice had been breached and provide particulars of such events and occasions (with reference to plans and drawings, photographs and documents as necessary and appropriate), including but not limited to the dates, time, locations, number of steel bars affected and the equipment used to shorten or cut the steel bars.
- (b) Identify the managers, supervisors, inspectors and/or other persons who witnessed such events and occasions.
- (c) Identify the workers who shortened, cut or defectively connected the steel bars and the party or entity which employed or engaged those workers and persons.
- (d) If the events and occasions were reported to you by your managers, supervisors, inspectors and/or other persons, identify the person(s) who made the reports to you.
- (e) Following Your Company's knowledge of the relevant events and occasions, please describe and explain what steps and measures were taken by Your Company to (i) investigate the Defective Steel Works; (ii) alert and report the matter to the Main Parties and the Government or any of them and (iii) rectify the Defective Steel Works.
- (f) If a report was made, please identify the persons in Your Company who reported the matter to the Main Parties and the Government and the recipient(s) of such reports. If the matter was not reported to the Main Parties and the Government, please explain why no report was made.
- (g) Describe the responses, reactions and steps taken by the recipient(s) and the relevant Main Parties and the Government in addressing Your Company's report.
- (h) Whether or not it was as a result of Your Company's report, please confirm and identify the persons in the Main Parties and the Government who Your Company believes might be aware of the existence of the Defective Steel Works at the material time and explain the basis of your belief.

66. From my own recollection, there were five incidents of non-compliant rebars/couplers which were observed on site during the EWL slab works – four of these incidents are from memory, and one was put on record (i.e. the third incident on 15 December 2015).

67. These incidents, which involved the threaded ends being trimmed down, were contrary to standard industry practice, and indeed, the QSP does not provide for or permit the cutting of the threaded ends (which were specially prepared by BOSA).

(i) First incident

68. In respect of both the first and second incidents, I am certain that they took place before I was promoted to SLOW II and before the third incident occurred on 15 December 2015.

69. As far as I can recall, the first incident was most likely to have taken place in Area C1 in or around August/September 2015, on the basis that:

69.1. At the time of the first incident, I remember that I was still an IOW, which meant that I was supervising Areas A to C1, whereas Joe Wong was responsible for Areas C2 to C3.

69.2. I distinctly recall that the issue occurred in an area with a 3-metre EWL slab, so it could not have been in Area A or HKC. Areas C2/C3 were not within my remit at the time. I recall quite clearly that in Area A (and hence the period of May to July 2015 within which the rebar fixing works were carried out and completed in that area), there were no non-conformances in respect of couplers and the threaded end of rebars.

69.3. Further, as the Area B rebar fixing works commenced in mid-November 2015, the incident could not have occurred in that area before my promotion in November 2015.

69.4. I am also certain that Areas C1-1 and 1875 were not relevant (as the rebars were completed together at an earlier stage). Accordingly, the first incident was most likely to have been in Areas C1-1 to C1-2.

70. During this first incident, I noticed one or two non-compliant threaded rebars (which I suspect had been cut by a portable wire cutter, such that they were shorter than the rebar length required by BOSA) on the ground, at a time when there were rebar fixing

works in progress in the area. The threaded ends of the non-compliant rebars (which were intended to be used with 86 mm long couplers for Type A connections) were shortened by half, compared to the length they should have been. I do not know who was responsible for cutting the threaded ends.

71. I immediately contacted LCAL's site supervisor, Mr Chan Chi Yip, and asked what was the deal with the threaded rebars. Mr Chan Chip Yip assured me that he would resolve the problem immediately.
72. Shortly thereafter, LCAL notified me that the workers would start rectifying the rebars, and I personally went down to site to oversee the rectification process— the workers used an electric concrete breaker to hack off the concrete around the couplers concerned, and then installed new couplers and compliant rebars (new couplers had to be used because it was impossible to install a compliant rebar into the original couplers).
73. I did not mention the incident to my colleagues or any other parties, nor was this reported in a meeting or otherwise, as the issue was resolved immediately on site. Normally, I would only report serious site safety issues, changes in the design drawings, or serious delays in the progress of the works. Quality matters would only be escalated to the SIOW or other parties if they could not be resolved on site; however, this incident was resolved to my satisfaction.

(ii) Second incident

74. The second incident (which took place after the first) was most likely to have taken place in Area B in or around October/November 2015, on the basis that:
  - 74.1. I recall that the incidents were infrequent and temporally distant from each other, such that it was most unlikely to have been in Area C1 again.
  - 74.2. After being promoted to SIOW II, I recall that I did not immediately reshuffle the division of labour, such that I continued to carry out site surveillance in respect of all areas in the HUH for a period of time. Therefore, the second incident was most likely to have taken place in Area B.

75. The facts were largely the same as the first incident, except that I did not personally oversee the rectification process. I do not know who was responsible for cutting the threaded ends. On that same evening or the day after, I returned to the relevant area to inspect the new rebars and couplers that had been installed, and I saw that they were all compliant.
76. Again, I did not mention the incident back at the site office or report it to any other parties in meetings or otherwise, as the issue was resolved immediately on site to my satisfaction.

*(iii) Third incident*

77. Areas C3-2 and C3-3 were inspected by Mr Andy Wong (AIOW). I cannot now remember the exact wording of the conversation on 15 December 2015, but Mr Wong basically said on the phone to me that he had found one or two rebars with the threaded end trimmed down. Shortly thereafter, I arrived on site to see what was going on, and Mr Wong again reiterated what he had already told me over the phone.
78. I personally inspected the area, and I identified five rebars with the threaded end trimmed down – these rebars had not been properly installed into the couplers, as the rebars were just barely touching the mouth of the couplers. There was also a severed piece of threading and a wire cutter on the ground nearby, as shown in the photo with Mr Wong's hand visible therein.
79. There was inevitably some metallic debris stuck on the threading as a result of the cutting, and when the trimmed end was inserted into the coupler, the debris was left on the outer rim of the coupler – this was immediately obvious to experienced inspectors like myself and Mr Wong.
80. Again, I do not know who was responsible for cutting the threaded ends. Other than the five non-compliant rebars identified, I can confirm that the other rebars and couplers in the area were checked and considered to be compliant and acceptable.



81. In the late afternoon, I phoned LCAL's Mr Chan Chi Yip and asked him to deal with the problem. I also asked Mr Wong to remain on site and oversee the rectification works.
82. As always, LCAL took action immediately, while I returned to the site office to send out to LCAL's Mr Joe Leung, Mr Andy Ip, Mr Kevin Harman and Mr Edward Mok the email dated 15 December 2015 in the evening, in which I reported that '*our ALOW and under my routine inspection to threaded bars, at 3m thickness EWL slab at Area C3bay C3-2 / C3-3, was found 5 number of threaded steel bars heads*', and that '*[t]he remedial works was conducted immediately and witnessed by our ALOW at night time*'. LCAL's Mr Gary Chow (Construction Manager) and Mr Gabriel So (General Superintendent) were also copied in, as well as MTRCL's Mr Pedro So (SIOW), Mr Derek Ma (ConE I), Mr Louis Kwan (ConE II), Mr Jeff Cheung (ConE I), Mr Andy Wong (ALOW), Mr Joe Wong (IOW), and Mr Tommy Leong (ALOW).
83. Mr Andy Wong did not report any problems with resolving the incident, so my understanding was that the non-compliant threaded rebars/couplers had been rectified. I learned about LCAL's non-conformance report ("NCR") to Fang Sheung when LCAL's Mr Andy Ip asked me for more information for the purposes of preparing the NCR. Thereafter, NCR no. 157 was issued by LCAL on 18 December 2015.
84. Subsequently, I was informed by LCAL (either Mr Andy Ip or Mr Edward Mok) that NCR no. 157 could not be closed out without a proper RISC form being endorsed by MTRCL, so LCAL submitted a RISC form on 18 August 2016 to put everything on record. This was formally endorsed and closed out on 11 September 2016.

(iv) Fourth and fifth incidents

85. The forth incident was in Area C1-5, and the fifth incident was in Areas B-4/B-5 (where the rebar fixing works were done concurrently) – I recall clearly that each of these incidents were in different locations from the previous incidents.
86. The facts were again largely the same as the previous incidents, and I do not know who was responsible for cutting the threaded ends. I did not personally oversee the process of rectification, and I simply returned to site shortly afterwards or on the next day to inspect the rectified rebars and couplers, which I considered to be satisfactory.

87. On the whole, there were only a very small number of non-compliant rebars/couplers observed on site, and other than the five incidents outlined above, I do not recall ever seeing any other problems or non-conformances in relation to the rebars or couplers in the diaphragm wall and EWL slab works.
88. For this reason, I did not consider it to be a serious issue insofar as the non-conformances were immediately rectified. This was particularly so in the grand scheme of things, with an infrastructure project of this scale. For this reason, other than the third incident in December 2015, it was unnecessary to escalate the incidents to my immediate superiors, MTRCL's senior management or the Government.

**Item 11: Given the matters and allegations stated in the Press and Media Reports and the evidence of Fang Sheung as extracted in items 9 and 10 of the Letter:**

- (a) Provide your detailed comments and explanation on the matters and allegations stated in the said Press and Media Reports.
- (g) In relation to the steel fixing works undertaken by Leighton and its subcontractors, explain whether they or any of them have experienced and/or reported any difficulties and issues to Your Company including, but not limited to, the fixing of steel bars into the couplers.
- (h) If so, describe and explain the difficulties and issues and provide the reasons for such difficulties.
- (i) Explain and confirm how often or common it was that Leighton and its subcontractors would encounter difficulties in the steel fixing works.
- (j) With the help of diagrams and drawings, indicate the exact locations of where the steel bars were shortened, cut or improperly connected within the diaphragm walls and platform slabs.
- (k) Indicate and confirm (either with reference to contemporaneous records or provide your best estimate) how many steel bars had been shortened, cut or improperly connected within the diaphragm walls and platform slabs.
- (l) Confirm whether Leighton, its subcontractors and/or their respective workers had referred such difficulties and issues to Your Company and if so, please identify (with particulars) the entities and/or person(s) who referred the difficulties and issues to Your Company and describe the replies and instructions given by Your Company to resolve the difficulties and issues. Please state whether the replies and instructions were given orally or in writing. If orally, identify by whom and to whom the same were made, when and in what circumstances. If in writing, please produce all relevant documents.
- (m) Please provide contemporaneous written documents (if there were any) recording the reports made by Leighton, its subcontractors and/or their respective workers on the said difficulties and issues to Your Company and the replies and instructions given by Your Company (if any).
- (n) Confirm whether Your Company was aware that instructions were given by Leighton for the steel bars to be shortened and cut in order to overcome the

said difficulties and issues. If so, at which point in time did Your Company become aware of such instructions.

- (o) After the steel bars were shortened and cut, or in some cases, after the shortened steel bars were screwed into the couplers, please explain and confirm whether Your Company had directed and insisted that rectification measures be taken by Leighton and/or any of its subcontractors to ensure the compliance, quality, safety and integrity of the diaphragm walls and platform slabs. If so, describe and explain the rectification measures taken and rectification work(s) carried out and whether inspections had been carried out thereafter. If not, please explain why not.
- (p) Explain whether it is common in the construction of diaphragm walls and platform slabs for steel bars to be shortened and cut and confirm whether such shortening and cutting of steel bars within the diaphragm walls and platform slabs is acceptable and in compliance with Requirements, Standards and Practice.
- (q) Explain and confirm whether such shortening and cutting of the steel bars within the diaphragm walls and platform slabs would compromise the quality, safety and integrity of the diaphragm walls and platform slabs.
- (r) In cases where steel bars were shortened and/or inserted into the couplers but not to the full extent as specified under the Requirements, Standards and Practice, explain and confirm whether:
  - (i) it would compromise the quality, safety and integrity of the diaphragm walls and platform slabs.
  - (ii) it would be apparent on a visual inspection to supervisors and/or inspectors that the steel bars were shortened and cut and not properly inserted into the couplers.
  - (iii) it is possible on inspection (visual or otherwise) to detect and identify that the steel bars were shortened and cut and not properly inserted into the couplers.

89. Having reviewed the various media reports, videos and photos published by HK01 and Apple Daily, I cannot be sure that those videos and photos were actually taken at the Contract 1112 site on the SCL Project, and it seems to me that the source and basis of the various allegations are unclear. Indeed, most of the photos published in the press appear to show works in progress during the construction of the diaphragm wall and the EWL slab, and they are at best inconclusive.

90. In particular, I have considered the video published by HK01 on 12 July 2018 – there appears to be footage showing rebar cages lying horizontally on the ground and being fixed by the workers – this is consistent with the mock-up rebar cages (extending for the full length of a single panel) which were fixed in the bending yard at the beginning of the diaphragm wall works i.e. in or around June/July 2013. There also appears to be separate footage/stills in the video of vertical rebars and splicing assemblies at a

different stage and location of the diaphragm wall works, and they seem to show works in progress in the diaphragm walls rather than the final 'as-built' condition of the rebar cages. I believe that these various footages relate to different stages and locations of the diaphragm wall works, and are both misleading and inconclusive.

91. As far as I can recall, I have never heard LCAL or Fang Sheung refer to the cutting of rebars, be it the threaded ends or otherwise, and nor have I heard of any particular difficulties in the rebar fixing works from either of these parties at the time of the diaphragm wall and EWL slab works.
92. There were occasions when I saw the use of Type B rebars (with longer threaded ends) in conjunction with Type A connections at the joint between the EWL slab and the diaphragm wall in Area B. Upon reviewing the photographic records on MTRCL's project server, I recall occasions when we had to use a tape measure to check the length of the exposed threading, and then ask the workers to unscrew the rebar so that we could measure the full length of the threaded end (see **images 5 and 6 below**). Upon measurement, I was satisfied that it was a Type B threaded end which was properly spliced into a coupler at a Type A connection. To be clear, there was no cutting or shortening of the Type B threaded end.



**Image 5: measurement of exposed threaded end in Area B-1**



**Image 6: measurement of threaded end removed from coupler in Area B-1**

93. Therefore, even if LCAL/Fang Sheung ran out of Type A rebars and had to use Type B rebars with the couplers for the purpose of Type A connections, there would be no need to cut the threaded end of the Type B rebar, as they could simply use the Type B rebar as prepared by BOSA – the threaded end in excess of the coupler length would not cause any issues and would not affect the minimum lap length required.
94. In terms of the cutting of rebars generally, it was of course necessary to trim the standard rebars delivered to site (which were 12 metres long) to the correct length, and this was typically done with a bending machine. Personally, I have never seen any workers cut any of the rebars with wire cutters at the work areas where the rebars were being fixed, be it for the diaphragm walls or the EWL slab. When it comes to the threaded end, it is neither common nor acceptable to cut it in any way, which is why I asked LCAL to rectify the non-conformances in the five incidents already outlined above.
95. I am unable to comment on the quality, safety or integrity of the shortened rebars/threaded ends, and I believe that this is a question for an independent expert to address.

96. Other than the above additional observations, my comments in paragraphs 66 to 88 above adequately address the questions posed under items 11(a) and 11(g)-(r) so far as I am concerned, save that I do not consider that I am in the position to express any opinion on the safety and integrity of the diaphragm walls and platform slabs, as that is a matter for an independent expert.

**Item 12: On the same page 36 of the MTRCL Report, Fang Sheung “further confirmed that their steel fixing works were regularly checked by Leighton and MTRCL” and Fang Sheung would not proceed to next stage of works unless permission was given. With reference to the steps, procedures and timeline in the construction and completion of the steel fixing works in the diaphragm walls and platform slabs as stated in your answer to paragraph 5 above, please:**

- (a) **describe at which stage the steel fixing works would be inspected by Your Company and Leighton.**
  - (b) **state how frequently Your Company and Leighton would carry out the inspections.**
  - (c) **identify the supervisors and persons in Your Company and Leighton who carried out the inspections.**
  - (d) **describe and explain how the inspections would be carried out, whether they were visual inspections only or equipment was used or both.**
  - (e) **confirm whether reports or records were kept following the inspections and if so, please produce such reports and records.**
97. My comments and observations in paragraphs 24 to 65 above adequately address the questions posed under items 12(a)-(e) so far as I am concerned, and there is nothing further that I have to add.


**Item 13(b): Confirm whether Your Company was aware that steel bars were being shortened or cut by hydraulic cutters on site, and if so, what were the reasons for using a hydraulic cutter to carry out such work.**

98. I can confirm that I have never seen any hydraulic cutters on site, and most certainly not in the areas where rebar fixing works were carried out. I am also not aware of any other work activities requiring a hydraulic cutter on site. In fact, the use of a hydraulic cutter to trim a rebar is most likely to deform the end of the rebar, unless the blade of the hydraulic cutter is extremely sharp.



99. I have, however, seen wire cutters on site. As mentioned above in relation to the incidents of non-conformances, where I observed shortened threaded ends on site (which I suspect were trimmed down using a wire cutter), I immediately asked LCAL to rectify the threaded rebars/couplers and was satisfied with the rectification works.

**Dated 20<sup>th</sup> August 2018**

  
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**WONG Chi Chiu**

*I certify that I, YUEN Justin Hayden, a trainee solicitor of Mayer Brown JSM, 16-19/F, Prince's Building, 10 Chater Road, Central, Hong Kong, have interpreted the contents of this witness statement to the person making this witness statement who appeared to understand the same and approved its content as accurate ~~and made his signature in my~~ presence. *Yuen**

  
\_\_\_\_\_  
**YUEN Justin Hayden**

**Date: 20<sup>th</sup> August 2018**

Corrigendum to the Witness Statement of Wong Chi Chiu  
dated 20 August 2018

Page	Paragraph	Content
B438	69.4	Replace “ <i>the first incident was most likely to have been in Areas C1-1 to <u>C1-2</u></i> ” with “ <i>the first incident was most likely to have been in Areas C1-2 to <u>C1-4</u></i> ”.