

**Commission of Inquiry into the Construction Works at and near the Hung Hom Station
Extension under the Shatin to Central Link Project**

THIRD WITNESS STATEMENT OF JOE TAM

I, **JOE TAM** of 39/F Sun Hung Kai Centre, 30 Harbour Road, Hong Kong, will say as follows:

1. I refer to my first and second witness statements dated 2 October 2018 and 22 October 2018 respectively. Unless otherwise stated or the context otherwise requires, any abbreviations shall bear the same meaning as in those statements.
2. Unless otherwise stated, the facts stated herein are within my personal knowledge and are true. Where the facts and matters stated herein are not within my own knowledge, they are based on the stated sources and are true to the best of my knowledge, information and belief.

Duties and responsibilities for the North Approach Tunnels area

3. I covered the North Approach Tunnels area (“**NAT**”) of the Project as the Construction Manager from January 2015 to July 2017. I was responsible for managing the site agents, the sub agents and the engineers below them in Leighton’s construction engineering team and assisting them in resolving any issues that they raised with me. I reported up to the Project Manager at Leighton, who subsequently took over my responsibilities after I was transferred to another project, when most of the reinforced concrete (RC) structures were completed in the Project. This transferral arrangement was also in accordance with the revised demobilisation plan, although I was still working on the Project on a part-time basis in August and September 2017.
4. The part of the NAT which I covered includes: -
 - (a) the three stitch joints in NAT and at the interface between the Project and the Hung Hom North Approach Tunnels contract (Contract SCL 1111) (“**SCL 1111**”) respectively which were subsequently found to be defective (the “**3 Stitch Joints**”); and

- (b) the shunt neck interface between the Project and SCL 1111 (the “**Shunt Neck Joint**”).
5. Wing & Kwong Steel Engineering Company Limited (“**Wing & Kwong**”) was the subcontractor for rebar fixing works, and Hills Construction Limited (“**Hills**”) was the subcontractor for the formwork and concreting works, for the NAT, the 3 Stitch Joints and the Shunt Neck Joint.
 6. I usually attended weekly (often on Wednesdays) construction meetings with the MTRCL’s construction engineers, led by their Senior Construction Engineer. Henry Lai (Engineer), a member of Leighton’s construction engineering team on the Project, would attend with me. During those meetings, we would often provide information (e.g. working schedule) as requested by the MTRCL’s construction engineers for the purpose of assisting them to monitor progress. This information might also be used as milestone schedule at the senior management meeting every Thursday morning between Leighton and MTRCL.
 7. I would participate in the senior management meeting on Thursdays. That meeting was also attended by my seniors as well as Leighton’s Construction Managers for other areas of the Project. As regards MTRCL’s attendance, their Senior Construction Engineers, Construction Manager and other senior members of staff on site would be present. The design team from MTRCL would sometimes join the meeting. Matters related to the Project such as progress, construction issues and any other issues arising on the site at the time would be discussed in those meetings.
 8. I conducted site visits a couple of times a week, depending on whether there were specific issues that I needed to attend to as well as my schedule – but I would at least visit the site once a week. During those site visits, which would usually take me half a day, I would check on progress, safety, general work quality, arrangement and environment. I would also conduct brief checks on the rebar that had been installed, by reference to the relevant drawings to see if there were any obvious issues.

9. In addition to the above site visits, I would also attend several weekly walks on site:
- (a) site walks on Mondays and Thursdays afternoons with Aidan Rooney and TM Lee (General Managers) of MTRCL respectively (I started attending the Thursday site walks with TM Lee in April 2017);
 - (b) safety walks (in which I would occasionally participate);
 - (c) walks before the handover of work;
 - (d) when there were critical or specific progress issues to which I needed to attend; and
 - (e) occasional, non-scheduled inspection site walks with the MTRCL's Inspectors of Works. During these inspection site walks, I would generally check the resource level of the works in different areas of the Project, work progress, safety, environmental and quality issues.

The 3 Stitch Joints

10. At the time of construction, my understanding was that the steps and procedures involved in the rebar fixing and concreting works for the construction of the 3 Stitch Joints were no different from other rebar fixing and concreting works in other areas of the Project. The 3 Stitch Joints were to be connected by inserting rebar into couplers that were installed in the concrete on both sides of the joint, and tying the rebar to those in the couplers in order to form a lapped connection. However the 3 Stitch Joints were different to the other works in that the bay width was much smaller (i.e. about 2 metres versus 10 metres), they were cast late and out of sequence, and for the two of the 3 Stitch Joints that have roof structures, those roofs were poured using concrete injection rather than the usual fill from the top.
11. The type of the coupler and rebar to be used at the 3 Stitch Joints was not specified in the working drawings prepared by MTRCL, which were made available to Leighton, for the construction of the 3 Stitch Joints.
12. The construction drawings did not specify the rebar size for the stitch joints at the SCL 1111 side of the interface. Therefore, Leighton submitted a Request For Information

- (RFI) to MTRCL in May 2016. Under item 3 of the RFI, Leighton asked for the RC details for the stitch joints at the SCL 1111 side of the interface. MTRCL issued a reply in June 2016, showing the couplers at both sides of the stitch joints, although the size was not specified (numbered **LCAL.NAT.8.03** to **LCAL.NAT.8.05** in the Second Index of Documents disclosed by Leighton ("**Index**").
13. The interface meetings between Leighton and the contractor for SCL 1111 were attended by other members of Leighton's construction engineering team. I did not attend the meetings, but those attending from Leighton would usually report to me. MTRCL's construction engineers for both the Project and SCL 1111 also attended those meetings. I was occasionally included in the email circulation for the meeting minutes. I understand that the finalised meeting minutes would be issued and submitted to the ePMS system (numbered **LCAL.NAT.3.04** in the Index).
14. According to the minutes of the interface meeting held on 2nd September 2016 (numbered **LCAL.NAT.3.18** in the Index), which was attended by Jim Wong (Senior Site Agent) and Regina Wong (Sub Agent) of Leighton, Fans Chan (Assistant Section Manager) of the contractor for SCL 1111, Chris Chan (Construction Engineer I) and Kappa Kang (Construction Engineer II) of MTRCL for the Project, and Patrick Cheung (Construction Engineer I) and Hazel Lau (Construction Engineer II) of MTRCL for SCL 1111, it had been discussed and approved that T40 rebar would be BOSA threaded and connected to BOSA branded couplers, whereas other rebar would be LENTON threaded and connected to LENTON branded couplers. This matter was reported to me at the time, though I did not know whether this was also passed on to other members of Leighton's construction engineering team. I did not receive the minutes of this meeting by email at the time, or find the finalised meeting minutes in the ePMS system.

Testing of rebar

15. I understand that the engineers of Leighton's construction engineering team on the Project were typically responsible for the ordering of batches of rebar and couplers, and for liaising between the rebar fixing subcontractor and the rebar supplier. The engineers would typically place an order for a batch of rebar with the supplier (who was under contract with Leighton), after the rebar fixing subcontractor provided the engineers with the information on the rebar needed such as the quantity, size and required delivery date.

The rebar fixing subcontractor was not required to verify such information at the time when they requested the engineers to place an order with the supplier.

16. Furthermore, the rebar delivered to the site would be tested in accordance with an established procedure by MTRCL's laboratory. I was not involved in the ordering and testing process for rebar and couplers. I understand that Leighton's quality assurance team would arrange the rebar tests with the assistance of the Leighton's construction engineers who ordered the rebar. I am not aware of any failed test results.

I was not involved in the investigation to identify the defects at or the remedial work for the 3 Stitch Joints.

The Shunt Neck Joint

17. At the time of construction, my understanding was that the steps and procedures involved in the rebar fixing and concreting works for the construction of the Shunt Neck Joint were no different from other rebar fixing and concreting works in other areas of the Project.
18. The key difference between the Shunt Neck Joint and the 3 Stitch Joints was that a construction joint (instead of a stitch joint) was used at the Shunt Neck Joint to connect the interface between the Project and SCL 1111 in the Shunt Neck.
19. I understand that the type of the coupler was not specified in the working drawings prepared by MTRCL and available to Leighton, for the construction of the Shunt Neck Joint.
20. Prior to the construction of the Shunt Neck Joint, Fans Chan (Assistant Section Manager) of the contractor for SCL 1111, by email dated 23rd November 2015, sought clarification from MTRCL as to whether the stitch joint at the Shunt Neck Joint was still required, because Fans Chan expected that a stitch joint was not required. Louis Lam (Senior Design Management Engineer) of MTRCL confirmed by email dated 25th November 2015 that the stitch joint was no longer required and a construction joint would be adopted instead. Fans Chan forwarded the email correspondence to Jim Wong (Senior Site Agent) of Leighton on 15th February 2016 (numbered LCAL.NAT.8.06 in the Index). Leighton also submitted a RFI to MTRCL in May

2016 and received a reply in June 2016 (numbered **LCAL.NAT.8.03** to **LCAL.NAT.8.05** in the Index) that there was no stitch joint at this Shunt Neck Joint.

21. My understanding of the ordering and testing process for the rebar and couplers used in constructing the Shunt Neck Joint is similar to the process described in paragraphs 15 to 16 above. I am not aware of any significant difference in the testing process for the rebar ordered and used at the Shunt Neck Joint.
22. I was not involved in the investigation to identify the issues or the subsequent remedial work in relation to the Shunt Neck Joint.

Supervision, inspection and record of the works

23. When I was on site, I would often see the MTRCL's construction engineers doing their own routine inspections. Sometimes they would approach me when there were any issues that they would want to discuss. I also understand that the MTRCL's Inspectors of Works were always present on site, carried out routine inspections proactively and took records of work progress on site.
24. For each concrete pour, there were two "hold points" when Leighton would need to request MTRCL's construction engineer / Inspector of Works to conduct formal joint inspections: after reinforcement bar fixing ("**rebar fixing check**") and before the pouring of concrete ("**pre-pour check**"). Leighton's engineers would only allow work to proceed after a rebar fixing check / pre-pour check if the MTRCL's construction engineer / Inspector of Works had given verbal approval.
25. I was not personally involved in those formal joint inspections, but those in Leighton's construction engineering team who assisted me would report to me if there were any specific issues that required my attention. I understand that MTRCL did not object to any of the concrete pours in the NAT, the 3 Stitch Joints or the Shunt Neck Joint.
26. I was not aware of any issues regarding the reinforcement at the NAT, the 3 Stitch Joints or the Shunt Neck Joint. I only learnt that there were issues with the 3 Stitch Joints and the Shunt Neck Joint after Leighton conducted the investigation in those areas.

27. Generally speaking, I would be informed when MTRCL directed Leighton not to proceed with the pouring of concrete. I recall there was one such occasion when MTRCL instructed Leighton to stop the concrete pour as a result of the weather conditions. Heavy rainfall during the issuance of the Black Rainstorm Signal the night before the scheduled concrete pour resulted in flooding; that concrete pour was therefore delayed for a few days. I raise this example in order to demonstrate that MTRCL was fully aware of what was happening onsite.
28. I cannot recall MTRCL complaining or raising any concerns at the weekly construction meetings or senior management meetings that Leighton's engineers did not obtain approval from MTRCL's construction engineer / Inspector of Works to lift the "hold points", before allowing work to proceed after a rebar fixing check / pre-pour check during the construction of the 3 Stitch Joints or the Shunt Neck Joint. In fact, there were several occasions when MTRCL's construction engineers (e.g. Chris Chan, Joe Tsang) and Inspectors of Works (e.g. Hang, Victor Tung) followed up with members of Leighton's construction engineering team or myself regarding the progress of the next step after the rebar fixing check, such as the formwork erection and general preparation of the area for concrete pour.

Dated the day of April 2019.

Signed:.....

30 April 2019.

Joe Tam