

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

**Supplemental Expert Report
("Huyghe Report 2")**

Prepared for
MTR Corporation Limited

Instructed by
Mayer Brown

Prepared by
Steve Huyghe
Chairman & Founder
CORE International Consulting, LLC
1760 Peachtree Street NW, Suite 100
Atlanta, Georgia 30309, USA

30 September 2019

TABLE OF CONTENTS

A. Introduction	3
B. RISC Form Procedure	3
C. Leighton’s Quality Assurance Plan	5
D. Method Statements & ITPs	7
E. Training on Couplers	7
F. Interface Management and Planning	8
G. Rebar testing	9
H. Design Management and As-Built Records	10

A. INTRODUCTION

1. In relation to the Extended Inquiry, I was instructed by Messrs. Mayer Brown to prepare an expert report in response to Mr. Rowsell's Expert Report¹ dated 23 August 2019. My Responsive Expert Report ("**Huyghe Report 1**") was submitted to the Commission dated 21 September 2019. After submission of Huyghe Report 1, I was further instructed by Messrs. Mayer Brown to prepare a Supplemental Expert Report ("**Huyghe Report 2**"), based upon the Directions given by the Commission on 24 September 2019.
2. As directed by the Commission, this Supplemental Expert Report presents my further opinions regarding Leighton's project management procedures and performance and how they may have caused or contributed to the work which is the subject-matter of the Extended Inquiry being executed other than in accordance with the Contract. In addressing Leighton's project management issues, I have also now had an opportunity to consider Mr. Wall's Expert Report ("**Wall Report**") dated 20 September 2019 and have taken into account his comments to the extent they are relevant to the issues being covered by this Supplemental Expert Report.
3. Under Contract 1112 dated 30 July 2013, MTRCL is the Employer and Leighton is the Contractor. MTRCL also performs the role of the Engineer under the Contract. I consider that MTRCL is entitled to proceed on the basis that Leighton will act as a competent contractor should in carrying out the works as prescribed in the Contract and that it will carry out and complete the same with due diligence, as set out in Clause 10.1 of the Conditions of Contract ("**CoC**") [C1839-C1840]. Therefore, my view is that Leighton's project management procedures and performance are inevitably an important consideration so far as the issues which fall to be considered by the Commission in the Extended Inquiry are concerned, as I will explain in more detail below.

B. RISC FORM PROCEDURE

4. The terms of Clause 60.1 of the CoC [C1885] and paragraph 5.1.1 of PIMS/PN/11-4 (Monitoring of Site Works) [B1582-B1583] required Leighton to allow MTRCL² to test and/or inspect the works at hold-points before Leighton could cover-up the works and proceed to the next construction activities. To that end, Clause G9.2.3 of the General Specification [C2107] requires Leighton to submit inspection and test plans ("**ITP**") to MTRCL for approval prior to the commencement of the relevant works.
5. Clause 10.36 of the Materials and Workmanship Specification for Civil Engineering Works ("**M&W Specification**") [C3768] requires Leighton to allow MTRCL to inspect the completed rebar reinforcement before it carries out any further work. The same Specification Clause 11.84(3) [C3824] establishes hold-points so that the works can be inspected prior to concreting.
6. Paragraph 5.1.2 of PIMS/PN/11-4 (Monitoring of Site Works) [B1583-B1584] provides that MTRCL's RISC form has to be used for recording hold-point inspections, and Clause G9.2.4 of the General Specification [C2108] requires Leighton to "*retain all inspection certificates, test certificates and certificates of conformity which shall be made available for inspection by the Engineer*". The sample RISC form, as a typical pro-forma for construction records, is also enclosed in Appendix BJ of the Particular Specification of the Contract. These provisions establish the contractual basis for Leighton to use the RISC form and follow the RISC form procedure.

¹ Based upon the Direction given by the Commission on 21 August 2019.

² MTRCL acts as "The Engineer" under Contract 1112.

7. In this regard, I do not consider that a contractor could ever reasonably and/or justifiably take the position that “because the engineer let me”, it did not have to follow its contractual obligations (such as adherence to the requisite inspection process and submitting RISC forms). As I have pointed out in paragraph 33 of Huyghe Report 1, Clause 2.9 of the CoC provides that no act or omission on the part of MTRCL shall in any way relieve Leighton of its obligations, and Leighton must be taken to be fully aware of its obligations in this regard. In addition, it is clear to me from the evidence that MTRCL continually requested Leighton to follow the RISC form procedures, but Leighton persistently neglected to do so and failed to approach the issue with the “*spirit of cooperation*”³. In this context, Leighton’s own evidence was that its engineers were struggling to catch up with the progress of the works, as they were constantly “*busy*” and “*fully occupied*” (if not overworked) and that this was the reason why it did not comply with its contractual obligations concerning RISC forms. Leighton, being an experienced contractor with previous experience of the need to comply with the RISC procedure from amongst other things a contractual perspective, should from a project management perspective have fully anticipated and actually provided the necessary resources needed to fulfill such an important contractual obligation.
8. Leighton’s Sub-Agent, Daniel Teoh, confirms in his witness statement that MTRCL’s Victor Tung (SIOW) had spoken to him regarding Leighton’s engineers falling behind in submitting their RISC forms [CC6502/paragraph 23]. Daniel Teoh then discussed the issue of late RISC forms with his Leighton team members, who confirmed that “*they had fallen behind in submitting RISC forms because they were spending all of their time doing more urgent work such as supervising the works and conducting inspections*” [CC6502/paragraph 23].
9. Leighton’s Engineers, including Raymond Tsoi [CC3795/paragraph 20], Jeff Li [CC3814/paragraph 21], Sean Wong [CC3804/paragraph 19], Alan Yeung [CC3824/paragraph 22], Ronald Leung [CC3832/paragraph 19] and Saky Chan [CC3843/paragraph 19], all gave similar reasons regarding why Leighton did not submit the RISC forms – they each stated that they were constantly busy in supervising the works, completing inspections and attending to other necessary tasks. Hence, they did not have the time to prepare all of the RISC forms and review those which might have been missed or outstanding.
10. In light of this evidence, I consider that it was Leighton’s own conscious decision not to submit and follow up with the RISC form process, but that decision should not have been driven or excused by the approach or behavior of MTRCL’s inspection and supervision staff. Leighton’s General Manager, Karl Speed, gave evidence in the Original Inquiry that for Leighton “*there’s nothing more important than safety. Then it would be quality, and then programme*” [Original Inquiry T16/128:17-129:4], but it is apparent from the evidence that they put programme ahead of quality, and this prioritizing eventually led to gaps in the record-keeping procedures.
11. In relation to the same issue, I note this is addressed in paragraphs 35, 56 and 70 of the Wall Report, where he opines that it was MTRCL’s team who did not follow or enforce the RISC process. For example, he relies on MTRCL’s Kit Chan’s witness statement which stated “*MTRCL did not insist on a strict adherence to the RISC form inspection procedure*”⁴, which gave the impression to Leighton that the RISC process had been amended⁵. For the reasons outlined above, I do not agree with Mr. Wall’s opinion on this issue.

³ See paragraphs 66 to 70 of Huyghe Report 1; paragraph 38 of the witness statement of Kit Chan [BB5198]; paragraphs 21 to 22 of the witness statement of Victor Tung [BB5253]; paragraphs 25 to 27 of the witness statement of Tony Tang [BB126].

⁴ Paragraph 49 of the Wall Report, Paragraph 42 of MTRCL Kit Chan Statement [BB5198].

⁵ Paragraph 70 of the Wall Report.

12. I note that even though MTRCL's team did give verbal approval to proceed after formal inspections but before the submission of a RISC form, there is no evidence showing that MTRCL relaxed the RISC form requirement in the sense of officially releasing Leighton from its contractual obligation to submit RISC forms. I would like to point out that Kit Chan in fact stated in paragraph 35 of his witness statement that "*I should emphasise that the toleration by MTRCL's CM Team was aimed at facilitating the progress of Leighton's works and avoiding delays and was based on the spirit of co-operation and trust that Leighton would complete the requisite paperwork shortly after such inspection*" [BB5197] and, as stated in paragraphs 61 to 63 of Huyghe Report 1, I can understand the problems that MTRCL were experiencing in trying to resolve the issue.
13. Therefore, it seems to me that MTRCL, in the spirit of cooperation and to prevent delays to the progress of the works, took Leighton at its word and believed in good faith that Leighton would catch up on the RISC forms, and I repeat my observations in paragraphs 37, 50 and 60 of Huyghe Report 1. However, as the missing RISC form process lasted over a considerable period of time (approximately from late 2014 to early 2017), my view is that MTRCL should have met with Leighton and assessed and evaluated how to rectify the situation at some point in the above timeframe. Nevertheless, I refer to the five reasons which Kit Chan clearly explained in his testimony [Extended Inquiry T14/1:20–2:22] and which have been considered in the Commission's Closing Submissions. Leighton, however, persistently failed to comply with the RISC form procedure and did not fulfill its commitments to MTRCL because priority was given to other tasks causing a lack of resources to deal with the RISC form process, and as I concluded in paragraph 80 of Huyghe Report 1, this was the root cause of the gaps in the RISC form records as investigated in the Extended Inquiry. I will elaborate further on the issue of resourcing in the next section.
14. Verbal assurances, do not provide the contractually required record for quality control, and Leighton's failure to consistently and comprehensively maintain RISC form records for every hold-point inspection falls foul of the contractual procedure and requirements set out in Clause 60.1 of the CoC, Clauses 10.36 and 11.84(2) of the M&W Specification, Clause G9.2.4 of the General Specification, and PIMS/PN/11-4. Leighton's failings with regard to the RISC form process have therefore caused the works to be performed in a manner which is contrary to the express contractual record-keeping and inspection requirements.

C. LEIGHTON'S QUALITY ASSURANCE PLAN

15. The RISC form procedure was a key aspect in terms of quality management and was integrated into Leighton's Quality Assurance Plan ("QAP"), which was submitted to MTRCL in accordance with Clause G.9.2.1 of the General Specification [C2106]. Leighton's QAP sets out how Leighton will manage and control the quality aspects of the works to ensure the requirements for quality during each phase of the Project are fully addressed and satisfied. The QAP was issued "*with the authority of the project director*". All subsequent changes to the quality plan had to be reviewed and authorized by the project director. In other words, the QAP was a document which Leighton's project management team members and site staff should be fully aware of and follow.
16. Kevin Harman, Leighton's Quality and Environmental Manager, gave evidence in the Original Inquiry that Leighton's QAP "*was prepared to satisfy MTRCL's requirements and it was based on standard Leighton documents*" [Original Inquiry T37/41:21-42:6]. I refer to paragraphs 45 to 48 of Huyghe Report 1, where I set out my observations regarding Mr. Harman not fully discharging his role under the QAP and in terms of monitoring compliance with the RISC form process.

17. In response to the Chairman’s question in the Original Inquiry regarding quality training, Kevin Harman said that Leighton’s engineers were responsible for inspection and everyone who joined the Project would receive training to get familiar with Leighton’s QAP [Original Inquiry T37/46:10-47:21]. Leighton’s QAP paragraph 3.3.2 Training also sets out that “Prior to starting onsite, all project personnel will undergo a site induction covering quality.....Quality induction will cover the key aspects of the Quality Assurance Plan, related procedures and other documentation such as inspection and test plans” [B3993]. In other words, Leighton’s staff members should have been familiar with the quality requirements and relevant RISC form procedure.
18. Leighton’s QAP uses a RISC form passing rate by MTR staff as one of its key performance indicators. In this regard, Leighton of course recognizes the importance and requirements of having RISC forms as inspection records (see extracted below) [B3978].

B) CONTRACT REQUIREMENTS, DELIVERABLES & WORK OUTPUTS						
B1	5	Respond to MTR workmanship NCR within 7 days of receipt	NCRs replied within 7 days / total of NCRs	100%	Monthly	QAEM + all staff
B2	6	RISC passing rate by MTR staff	Inspections passing first time / total inspections	90%	Monthly	Site staff

19. Leighton’s QAP sets out specifically that RISC forms would be uploaded to the Incite Keystone (Leighton’s electronic document management system) and be used in the Project for ensuring complete and accurate compilation of the required information [B4000/paragraph 6.1.4]. It was Leighton’s engineers’ responsibility in “initiating and maintaining relevant records; collating inspection and test records and forwarding them to the quality and environmental manager” [B3988-B3989]. As such, the obligation was firmly on Leighton’s engineers to prepare the RISC forms but, based on the evidence, Leighton’s engineers did not properly do so and did not follow Leighton’s own QAP.
20. It is clear from the witness statements of Leighton’s frontline site staff (as already mentioned above) that there were insufficient Leighton resources to support them in preparing and following the RISC form procedure. Leighton’s Quality Policy, as endorsed by its corporate management, further states that “[i]t is our policy to: Assign sufficient resources to enable us to provide the desired level of service to our clients and achieve the required quality standards” [B3977]. In this sense, it appears that Leighton did not understand the time required to perform the multiple steps to follow the RISC form process (in contrast to Leighton’s own quality assurance procedures, which Leighton’s staff were more familiar with⁶), with the consequence that it did not uphold its policy statement by assigning sufficient resources to the Project.
21. Therefore, it is my opinion that: first, Leighton did not follow its contract obligations on following the RISC form process; second, while Leighton’s QAP was supposed to serve as an internal project management guideline in relation to quality management, Leighton did not follow its project management system and no one in the organization took accountability for such situation.
22. Also, I would like to point out that Leighton did not suggest any other procedure to replace its contractual obligation to follow the RISC form procedure, which would have been a reasonable step to take in light of the difficulties it had in catching up with the requisite paperwork. There were other methods that could have been used to streamline this process. As an example, a RISC form document (two copies) could have been kept by Leighton in the field and filled out when a hold-point was reached. The workers could then have called MTRCL and recorded on this sheet when the call was placed and scheduled an inspection. When

⁶ See paragraph 48 of Huyghe Report 1 and [Original Inquiry T21/20:22-21:4; T21/21:22-22:1].

MTRCL and Leighton had successfully inspected the work, they could have signed the two copies which would have been readily available. The copy of the executed RISC form could then have been used to update the RISC Form Register and filed by MTRCL and Leighton. Once this type of RISC form procedure was in place, a written understanding could have been agreed between Leighton and MTRCL.

23. In my opinion, Leighton did not adhere to its own QAP and prioritize the execution of the RISC forms and allocate sufficient resources to the task of complying with the RISC form procedure, and it did not take any initiative to propose a simplified or streamlined RISC form procedure despite the self-imposed difficulties it was facing. By taking this approach, Leighton ultimately did not fully comply with its contractual obligation under Clause 57.6 of the CoC to perform the works in accordance with its own QAP. This contributed to the gaps that exist in the RISC form records and contributed to the uncertainty regarding the status of the rebar inspections at the stitch joints, all of which amounted to a failure to perform the works in accordance with the contractual record-keeping and inspection requirements set out in paragraph 14 above.

D. METHOD STATEMENTS & ITPS

24. Leighton was responsible for devising the construction sequence and hold-points involved⁷, therefore it was in the best position to provide specific details as to the number of RISC forms anticipated for a particular activity, and to produce a register to track the status of such forms/hold-points. Insofar as it is suggested in paragraph 64 of the Wall Report that the method statements and/or ITPs “*could be improved further so as to ensure that all parties were aware of the number of RISC forms that would be expected prior to the commencement of particular activities*”, I consider that Leighton was best placed to do so in accordance with its contractual obligations under Clause G9.2.3 of the General Specification [C2107], Clause P28.3 of the Particular Specification [C2291] and paragraph 6.1.6 of the QAP [B2537].
25. In the event that Leighton had prepared a method statement dealing specifically with the way in which the couplers had to be installed at the stitch joints, in my view this would have enabled all parties to have the information to provide proper inspections. This would, in turn, have avoided gaps in the RISC form records and reduced the risk of uncertainty regarding the status of important hold-point inspections, such as the rebar inspections at the stitch joints which form the subject-matter of this Extended Inquiry. Accordingly, I consider that Leighton’s failures in this regard contributed to the works being performed in a manner contrary to the contractual record-keeping and inspection requirements set out in paragraph 14 above.

E. TRAINING ON COUPLERS

26. The training in regard to the installation of couplers isn’t limited to just the process of “screwing in the rebar”. It involves a number of important issues like checking for proper welding/placement of the coupler into the rebar, directions on when the proper inspection should be required, how to document any deficient coupler installations, to name but a few.
27. I consider it an important fact that BOSA had to and did organise some training sessions on site for MTRCL and Leighton’s engineers⁸. It was clearly necessary to go through the QA/QC procedure under the QSP and the tolerance in terms of the number of threads that could be exposed for the BOSA splicing assemblies. It is also noteworthy that the requirements for Lenton couplers were materially different.

⁷ See e.g. Clause P28.3 of the Particular Specification [C2291] and paragraph 6.1.6 (Method Statement) of Leighton’s QAP [B2537].

⁸ Paragraph A5 of the witness statement of BOSA’s Paulino Lim [H44826-H44827].

28. In this regard, I note Mr. Wall raises a point in paragraph 78(b) of the Wall Report that *“the idea and functioning of a coupler is a simple matter and not sufficiently complex that it should require technical training”*. It is unclear to me whether Mr. Wall’s view is that training was not required for those who were responsible for the supervision and inspection of the coupler installation.
29. Based on the evidence given in the Original Inquiry, almost all of Leighton’s witnesses indicated that they were not familiar with the QSP requirements (which would include the tolerance for inspecting coupler assemblies)⁹, and Leighton plainly did not follow the record-keeping requirements under the QSP. I consider that Project-specific training for the coupler installation was necessary and should always be welcomed in the construction industry, especially since the precise technical requirements would vary from supplier to supplier.
30. I also consider that inadequate training and the lack of awareness of Leighton’s frontline staff of the different couplers used at the stitch joints and the different supervision/inspection requirements relating thereto have contributed to the works at the stitch joints not being performed in accordance with the Contract and the defects not being identified or rectified at the time of the works.

F. INTERFACE MANAGEMENT AND PLANNING

31. Leighton had clear, express obligations with respect to pro-active interface management and planning, which included (among other things) the obligation to submit appropriate method statements for the interfacing structures. Such obligations are set out in PIMS Procedure P/11/A3 (Construction Management) paragraph 8.1.1 [B1386], Clause P7.3.17 of the Particular Specification [C2213], Clause P28.3 of the Particular Specification [C2291], Leighton’s QAP paragraphs 6.1.6 (Method Statement) [B2537] and 7.3 (Communication and Interface Management) [B2541], and Table Z2.1.2 (Exchange of Design Information) in Appendix Z2 of the Particular Specification [BB429]. Therefore, I do not agree with the suggestion in paragraph 47 of the Wall Report that there were no provisions requiring a distinct method statement from Leighton for the stitch joint, and I repeat my observations in paragraph 87 of Huyghe Report 1.
32. In my view, Leighton had a primary responsibility to prepare the method statement at the outset, and I consider that it should have carried out its interface obligations and produced a specific method statement as set out in the preceding paragraph – indeed, I note that paragraph 47 of the Wall Report accepts that Leighton was ultimately responsible for preparing method statements for MTRCL’s approval. Leighton should also have made sure that its site staff and its reinforcing steel sub-contractor were all aware of the interface between Lenton and BOSA couplers at the stitch joints.
33. I have referred to the fact in paragraphs 89, 90, 128 and 129 of Huyghe Report 1 that some members of Leighton’s staff were aware through the interface meetings (the minutes of which were available to Leighton through the ePMS¹⁰) that different couplers would be used at the interface, but there appeared to be a *“communication breakdown”* within Leighton’s organisation¹¹. As stated in paragraph 7.12 of MTRCL’s Closing Statement [CS1/4.2/6], *“[u]nfortunately, none of the LCAL witnesses could offer a satisfactory explanation for not remembering and/or taking into account the need to order compatible rebar for use with the Lenton couplers at the interface between Contracts 1111/1112”*. Similarly, paragraph 48 of Leighton’s

⁹ See the testimony in the Original Inquiry of e.g. Gabriel So [T18/130:13-24, 132:15-20]; Chan Chi-Ip [T19/25:24-26:18]; Kyle Rogers [T15/38:20-22]; Joe Tam [T19/103:9-10]; Joe Leung [T20/6:8-7:15]; Man Sze-Ho [T22/24:23-25:4]; Anthony Zervaas [T17/150:13-17]; Kevin Harman [T37/39:14-41:9].

¹⁰ See the testimony of Joe Tam in the Extended Inquiry at [T8/164:19].

¹¹ See the testimony of Karl Speed in the Extended Inquiry at [T8/51:1-53:8].

Closing Submissions [CS1/3.1/21] acknowledged that its staff who attended the interface meetings ought to have known that Gammon was using Lenton couplers but, unfortunately, those individuals omitted to pass such information to Henry Lai who was the responsible engineer [T5/1:16-3:13]. In my opinion, this reveals deficiencies in Leighton's project management and internal communication system.

34. I therefore consider that the procedures and systems put in place by Leighton were inadequate for effective and proactive interface management and coordination, since there was no reliable method to handle transmitting specific design information for each interface point. Further, I consider that Leighton's failure to arrange a joint inspection with Gammon of the exposed couplers (as required by item 1.7 of Table Z2.1.1 [BB1/425] in Appendix Z2 of Particular Specification) prior to the stitch joint works being carried out reveals a further project management failure, as such a joint inspection should have alerted Leighton to the use of Lenton couplers by Gammon.
35. Leighton did not communicate the correct information regarding the interfacing works to its frontline staff, and that led to the defective works at the stitch joints. Had Leighton prepared a specific method statement showing the interface requirements at the stitch joints and/or communicated with the frontline staff responsible for checking the joints, the mismatch of couplers/rebars could and should have been prevented. In my view, these omissions ultimately led to the lack of awareness of Leighton's frontline staff of the different couplers used at the stitch joints, which in turn contributed to the works at the stitch joint not being performed in accordance with the Contract and the defects not being identified or rectified at the time of the works.

G. REBAR TESTING

36. Clauses 10.14 and 10.15 of the M&W Specification [C3754-C3756] clearly set out Leighton's contractual obligations in respect of the sampling and testing of rebars for each batch of materials delivered to the construction site. The same Specifications (and CS2:1995 referred to therein [BB1178-BB1213]) set out the required number of samples and tests [C3753, C3755].
37. The evidence makes it clear that MTRCL relied on Leighton to notify MTRCL of new materials to be sampled and tested¹², and the lack of notification from Leighton in respect of certain deliveries resulted in batches of rebars being used without any sampling/testing on site – an issue which has come to light in the Extended Inquiry. I consider that an improved procedure to ensure that Leighton notified MTRCL of the delivery of new materials to the site would prevent similar problems occurring in the future and, for this reason, I do not agree with the statement in paragraph 80 of the Wall Report that a procedure to ensure MTRCL is notified of the delivery of materials would not result in any tangible benefit.
38. In paragraphs 81, 99 and 100 of the Wall Report, Mr. Wall states that there were effective QA procedures for monitoring the delivery and use of rebars at the time of the works – that is not supported by Leighton's own factual evidence¹³. My opinion is that Leighton could and should have done the following:
- a. Proper communication and training should have been put in place to ensure that Leighton's staff and relevant sub-contractors understand the control system for rebars, particularly the colour coding system;

¹² See the testimony in the Extended Inquiry of e.g. Victor Tung [T13/37:18-38:6;41:3-42:5] and Tony Tang [T11/116:13-117:15]. The Chairman has also observed that the primary burden is on Leighton to notify MTRCL [T10/124:14-23].

¹³ See the testimony in the Extended Inquiry of e.g. Joe Tam [T9/28:5-29:7]; Raymond Tsoi [T10/75:14-21]; Alan Yeung [T10/55:11-57:25]; and Henry Lai [T5/127:14-128:14].

- b. A communication procedure should have been put in place between Leighton's frontline staff and the quality controller for the arrangement of rebar delivery and its sampling;
 - c. Sufficient resources should have been provided by Leighton to arrange for sampling and testing;
 - d. Leighton should have ensured compliance with the contractual requirements in respect of the sampling of rebars for testing by MTRCL;
 - e. Leighton should have clearly segregated the untested rebars from the tested ones to be deployed to site; and
 - f. Leighton should have provided better control and oversight of the rebar testing process.
39. Leighton itself has also admitted in general terms to the above root causes of untested rebars being used in the works in its own Incident Investigation Report for Quality Event dated 25 June 2019 **[DD13673-DD13676]**. In my view, Leighton's weaknesses in this regard resulted in the use of certain batches of rebars which have not been sampled/tested on site, and these batches made up circa 7% of the rebars delivered.
40. That said, with regards to the overall testing of rebars, and as pointed out in paragraph 133 of Huyghe Report 1, there is a good degree of confidence in the quality of the rebars used on this Project. However, there are always measures that can be considered to improve the process of handling tests and inspections.

H. DESIGN MANAGEMENT AND AS-BUILT RECORDS

41. I note Mr. Wall opines that the IoE conditions are principally imposed on MTRCL and that it was MTRCL's obligation to manage the associated risks¹⁴. Mr. Wall also states that there should be a requirement to keep working drawings up-to-date and properly controlled and distributed¹⁵. I agree that it is very important to keep working drawings current and managed. However, Clause P2.4 of the Particular Specification **[C2192]** requires Leighton to prepare all necessary submissions in accordance with the requirements of the IoE/IoC. This means that Leighton is the party responsible for (among other things) preparing and submitting alternative design proposals (including the necessary working drawing revisions and/or BD submissions) in relation to any design changes initiated by Leighton, such that it is inaccurate to suggest that the IoE/IoC requirements are principally imposed on MTRCL and not Leighton.
42. Insofar as Mr. Wall's observations might be said to be related to the use of couplers in lieu of lapped rebars at various construction joints in the NAT, SAT and HHS to maintain temporary access routes, I do not consider that it was an issue of design management. In my view, the application of couplers in this context is an issue of constructability¹⁶, and it is a common solution which can be properly implemented on site from a project management point of view, provided that proper records of the as-constructed works are maintained.
43. I note that paragraph 245 of the Commission's Closing Submissions points out that Leighton did not prepare proper as-built records of the locations where couplers were installed. Further, as set out in paragraph 87 of MTRCL's Closing Submissions, there was also a lack of records documenting the amount and locations of couplers used at each construction joint on site by Leighton. I consider that this is contrary to Leighton's obligation to prepare and submit as-built records under Clauses P28.6 (submission of all construction records required for the preparation of a comprehensive project record) of the Particular Specifications **[C2292]** and Clause G15.4.1 of the General Specification (submission of as-built drawings) **[C2131]** and as to which I can only repeat the view set out in paragraph 14 above.

¹⁴ Paragraph 88 of the Wall Report.

¹⁵ Paragraph 97 of the Wall Report.

¹⁶ See the testimony in the Extended Inquiry of e.g. Chris Chan **[T11/136:6-137:4]** and Kit Chan **[T14/39:4-11]**.

Expert's Declaration

I, STEVE HUYGHE DECLARE THAT:

1. I declare and confirm that I have read the Code of Conduct for Expert Witnesses as set out in Appendix D to the Rules of High Court, Cap. 4A and agree to be bound by it. I understand that my duty in providing this written report and giving evidence is to assist the Commission. I confirm that I have complied and will continue to comply with my duty.
2. I know of no conflict of interests of any kind, other than any which I have disclosed in my report.
3. I do not consider that any interest which I have disclosed affects my suitability as an expert witness on any issues on which I have given evidence.
4. I will advise the Commission if, between the date of my report and the hearing of the Commission, there is any change in circumstances which affect my opinion above.
5. I have exercised reasonable care and skill in order to be accurate and complete in preparing this report.
6. I have endeavoured to include in my report those matters, of which I have knowledge or of which I have been made aware, that might adversely affect the validity of my opinion. I have clearly stated any qualifications to my opinion.
7. I have not, without forming an independent view, included or excluded anything which has been suggested to me by others, including my instructing solicitors.
8. I will notify those instructing me immediately and confirm in writing if, for any reason, my existing report requires any correction or qualification.
9. I understand that:
 - (a) my report will form the evidence to be given under oath or affirmation;
 - (b) questions may be put to me in writing for the purposes of clarifying my report and that my answers shall be treated as part of my report and covered by my statement of truth;
 - (c) the Commission may at any stage direct a discussion to take place between the experts for the purpose of identifying and discussing the issues to be investigated under the Terms of Reference, where possible reaching an agreed opinion on those issues and identifying what action, if any, may be taken to resolve any of the outstanding issues between the parties;
 - (d) the Commission may direct that following a discussion between the experts that a statement should be prepared showing those issues which are agreed, and those issues which are not agreed, together with a summary of the reasons for disagreeing;

- (e) I may be required to attend the hearing of the Commission to be cross-examined on my report by Counsel of other party/parties;
- (f) I am likely to be the subject of public adverse criticism by the Chairman and Commissioners of the Commission if the Commission concludes that I have not taken reasonable care in trying to meet the standards set out above.

Disclaimer

I understand that this report will be made available to the Commission. This report has been prepared solely for that purpose. Neither I, nor CORE International Consulting, LLC, accepts or assumes responsibility for any other purpose, or to any other person to whom this report is shown, or into whose hands it may come save where expressly agreed by my prior consent in writing. I reserve my right to review any additional data and/or information provided by any party in relation to this dispute and, if necessary, revisit and possibly amend my analyses, opinions, and reports.

Statement of Independence

I have no conflict of interest with regards to providing an independent opinion in this matter.

Statement of Truth

I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. I believe that the opinions expressed in this report are honestly held.



Steve Huyghe
30 September 2019