

**COMMISSION OF INQUIRY INTO THE DIAPHRAGM WALL AND PLATFORM
SLAB CONSTRUCTION WORKS AT THE HUNG HOM STATION EXTENSION
UNDER THE SHATIN TO CENTRAL LINK PROJECT**

**WITNESS STATEMENT OF LEUNG FOK VENG
FOR
MTR CORPORATION LIMITED**

I, **LEUNG FOK VENG**, of MTR Corporation Limited, MTR SCL Hung Hom Site Office, Cheong Tung Road South, Hung Hom, Kowloon, Hong Kong, **WILL SAY AS FOLLOWS:**

1. I am a Design Manager in the Design Management Team of MTR Corporation Limited (“MTRCL”).
2. I first joined MTRCL in July 1995 as a Structural Engineer, and I remained in that position until July 1999. I subsequently joined the Kowloon Canton Railway Corporation (“KCRC”) in July 1999 as a Senior Civil Engineer for the Ma On Shan Rail Line. From August 2005 to January 2008, I was a Resident Engineer for the Kowloon Southern Link (now known as a section of the West Rail Line, from Nam Cheong to East Tsim Sha Tsui). Following the merger between MTRCL and KCRC in 2007, I was the Design Management Engineer I – Civil for the West Island Line from January 2008 to August 2008. My involvement in the Contract 1112 on the Shatin to Central Link Project (“SCL Project”) began in September 2008, when I was a Senior Design Management Engineer – Civil (“SDME”), I remained in that position until July 2012.
3. I am currently a Design Manager (“DM”) for the Contract 1112 on the SCL Project, and I have been in this role since July 2012. I reported to Mr. Clement Ngai (the current Head of Project Engineering and Chief Design Manager of MTRCL) and therefore only participated in design works specific to Contract 1112.

4. I obtained a Bachelor's Degree in Civil Engineering from the University of Birmingham in the United Kingdom in 1985, and I was a member of the Institution of Structural Engineers in the United Kingdom between July 1993 and 2016.
5. I am providing this witness statement: in relation to the design management processes and development of the connection detail design between the EWL slab and the east diaphragm wall during the construction stage of the SCL Project.
6. While I am aware of the matters stated in this witness statement based on my first-hand observations and personal involvement in the SCL Project since September 2008 and I confirm that the contents of this statement are true to the best of my knowledge and belief, there are occasions when I can only speak to matters by reference to MTRCL's documents due to the lapse of time, in which case I believe the contents of those documents are true and correct.

A. My role as the SDME and DM in the SCL Project

7. As mentioned above, I have been involved in the SCL Project since September 2008 as the SDME. With respect to new railway projects, the main responsibilities of the SDME (and also that of the DM which I was promoted to in July 2012) were to liaise with MTRCL's design consultants and prepare design submissions to the relevant Government authorities. In respect of the SCL Project, there were different SDMEs in charge of different parts of the whole railway project. For my part, I was responsible for liaising with Atkins China Limited ("**Atkins**"), MTRCL's design consultant under Consultancy Agreement No. C1106 ("**C1106**") for the detailed design for the Hung Hom Station and Associated Tunnels. Atkins' scope of design services under Consultancy Agreement C1106 included acting as MTRCL's detailed design consultant ("**DDC**") for the construction works under Contract 1112.
8. More specifically, my duties as the SDME and DM were to make sure that Atkins' design drawings could be produced on time for site construction. This involved reviewing detailed design submissions from Atkins on compliance with the applicable statutory and design requirements. I was also involved in obtaining the necessary acceptance from the relevant Government authorities (including the Buildings Department in the case of Contract 1112 under the Instrument of Exemption ("**IoE**") pursuant to EA3) for the design of the works.

9. Since I became the DM, I have been reporting to Mr. Clement Ngai. I was assisted by other SDMEs (including Mr. Kevin Yip), the Design Management Engineers (“DMEs”) and the Architects.
10. Generally speaking, the design management team (the “DM Team”, including the DM, the SDMEs and the DMEs) was more heavily involved in a new railway project (including the SCL Project) initially and up to the detailed design stage. Once the working drawings (which were prepared on the basis of drawings submitted to and accepted by the BD) were issued to the contractors, the DM Team would be less involved and it would only deal with specific design issues identified during the construction stage.

B. LCAL’s appointment of Atkins as design consultant (Atkins’ Team B)

11. Under Consultancy Agreement C1106, Atkins was appointed by MTRCL as its DDC for Contract 1112 of the SCL Project. However, in Works Proposal Group Meeting No. 2 held on 8 May 2013 (which was attended by MTRCL (including me) and LCAL), LCAL also proposed to engage Atkins as its design consultant. The following discussion was recorded in the minutes of that Works Proposal Group Meeting:-

“Engagement of Atkins for Design Works

- *LCAL to draft [Works Proposal] for [Works Proposal Group] endorsement of Atkins as designer for temporary work design with justification that LCAL’s arrangement with Atkins should be set up in such a way that this designer is independent and no conflict of interest with MTR’s designer (Atkins)*
 - *Should LCAL’s designer (Atkins) services involve the design or re-design of Contract 1112’s permanent structure, LCAL should raise this with justification and obtain approval from the [Engineer’s Representative] prior to proceed.”*
12. In or around September 2013, LCAL submitted a formal “Supplier / Subcontract Report” recommending the engagement of Atkins as its main design consultant for temporary works during the construction stage. MTRCL approved LCAL’s “Supplier / Subcontract Report” on 10 April 2015 with respect to the appointment of Atkins, but MTRCL also added a remark at the bottom of the “Supplier / Subcontract Report” that

“Atkins is also the DDC for MTR under Contract 1112 for HUH. LCAL design consultant (Atkins) – their design services must be provided by a separate team.”

13. Since the appointment of Atkins as LCAL’s design consultant, the team of Atkins’ detailed design consultants advising MTRCL has been known as “**Team A**”, whereas the new team of Atkins’ design consultants advising LCAL has been known as “**Team B**”. MTRCL only has contractual relationship with Atkins’ Team A, with whom the DM Team consulted in reviewing submissions from LCAL in Contract 1112.

C. **The BD Consultation Process**

14. Under the IoE issued by the BD to MTRCL on 5 December 2012, works connected with the design and construction of the Hung Hom Station Compound (“**HUH**”) of the SCL Project are exempted from the Buildings Ordinance (Cap. 123) (“**BO**”), but the exemption is confined to the procedures and requirements relating to the appointment of the Authorized Person and the Registered Structural Engineer as appropriate, approval of plans, consent to commencement and resumption of works and occupation of buildings.
15. Nevertheless, the IoE requires a consultation process in lieu of the statutory procedures, and MTRCL is required to submit drawings, plans and calculations and other details as part of the consultation process. The IoE also requires MTRCL to appoint a competent person (“**CP**”) who shall take up the responsibilities and duties of the Authorized Person/Registered Structural Engineer to co-ordinate and supervise each area of the works in accordance with the agreed proposals, to certify the preparation of plans or documents and to certify to the relevant authorities upon completion of works.
16. The design and consultation process for the HUH Compound under the IoE involves the following separate steps:
 - (a) **Detailed Design:** Atkins was responsible for developing from the preliminary design of the works to a detailed design that provided sufficient information for tendering of the construction contracts. The detailed design stage for Contract 1112 took place between 2010 and 2012. Once Atkins produced the detailed design, MTRCL’s DM Team (including me as the SDME at the time) would

review Atkins' design and ensure that such design complied with MTRCL's New Works Design Standards Manual ("NWDSM") and project specific requirements.

- (b) **BD Consultation:** After Atkins' detailed design had been reviewed by MTRCL and finalised, it would be submitted to the BD for review, consultation and comment in respect of structural engineering aspects for compliance with the statutory requirements.
- (c) MTRCL and Atkins participated in many working sessions and meetings with the BD and other Government authorities during the consultation process. These sessions and meetings mainly involved technical exchange, hence formal minutes were often not taken. The results of these working sessions and meetings would be incorporated into the detailed design through MTRCL's re-submission of design or BD's comments in its acceptance letter. The design of the HUH Compound is divided into three separate packages – Area A & HKC (Grid 0/15); Area B (Grid 15/22); and Area C (Grid 22/50). Each package is independent and the BD would review and comment on each of them individually.
- (d) I do not recall that during the working sessions and meetings mentioned in the paragraph above that there were any specific discussions on using couplers, as this was a common and minor part of the whole structural design.
- (e) After reviewing the detailed design submission from MTRCL and discussions in working sessions and meetings, the BD would reply to MTRCL on its response on the detailed design as submitted. BD's reply letter would usually be addressed to MTRCL's CP. Generally speaking, the BD's response to our detailed design submissions could be classified into (i) "acceptance subject to conditions and/or requirements"; and (ii) "certain fundamental issues had not been considered/addressed". If BD replied to our detailed design as being "acceptance subject to conditions and/or requirements", that meant the relevant construction works could commence so long as the conditions/requirement would be met during construction and comment(s) on the design submission from the BD (if any) would be incorporated and/or addressed in the subsequent submissions. The BD would enclose with its reply letter various appendices describing the detailed

comments and conditions/requirements that would need to be followed up. These appendices might also be cross-referred in BD's subsequent acceptance letters.

17. BD's comments on the detailed design submissions usually covered various design and construction aspects. Once the BD's reply letter on the detailed design was received by the CP, it would be circulated internally to various teams in MTRCL. The DM Team would be responsible for addressing design-related comments (which were conventionally set out in Appendix I to BD's reply letters), whereas the construction management team (the "CM Team") on site would address and follow up on construction-related comments (which were conventionally set out in Appendix II onwards in BD's reply letters).
18. Broadly speaking, after I received BD's design-related comments on the detailed design submissions, I would liaise with Atkins to address those comments and eventually Atkins would produce a set of updated drawings for construction. These are known as the "*Working Drawings*" issued to the CM Team on site, who would issue them to the contractors for construction. Working drawings in Contract 1112 bear the letters "1112/W" at the beginning of the drawing numbers.

D. Drawing Management During Construction

19. After site construction works commenced, there might be design changes to the permanent works which necessitated revisions to the original detailed design reviewed and accepted by the BD. Such design changes might be initiated by either MTRCL or LCAL due to various reasons, including LCAL's value engineering proposal and MTRCL's design clarifications.
20. If LCAL proposed any design changes to the permanent works, LCAL ought to seek MTRCL's (as the Engineer under Contract 1112) prior approval in accordance with the terms of Contract 1112. If MTRCL's CM Team received any submissions from LCAL proposing changes to the permanent works design, the CM Team would consider whether such proposal should be accepted based on a number of reasons including the value of any benefit gained and the necessity for such changes. If the CM accepted that LCAL's proposal was justified, it would forward such proposal to MTRCL's DM Team for consideration.

21. Upon receiving LCAL's permanent works design change proposal from the CM Team, the DM Team would review such proposal with Atkins' Team A to ensure the proposal complied with MTRCL's NWDSM and project specific requirements. If the design proposed required BD acceptance before the changes to the permanent works could be carried out, the DM Team would prepare consultation submissions to the BD on the basis of LCAL's design change proposal. BD's consultation process set out in paragraphs 16(b) to (e) above applied to such amendment consultation submissions. At the end of the consultation process, the accepted revised design would be reflected and communicated to LCAL (through the CM Team) either in Design Amendment Sheets ("DAmS") issued under cover of Engineer's Instructions, or the relevant revised working drawings.
22. Otherwise, the DM Team, after reviewing and accepting LCAL's proposal with Atkins' Team A, would issue DAmS or "Advanced DAmS" (those issued prior to formal DAmS) to LCAL via the CM Team. Once a certain number of amendments to the working drawings through DAmS had accumulated, the DM Team, through Atkins' Team A, would prepare a new revision of the relevant working drawings capturing all amendments made through DAmS between the previous and the new revision of those drawings. The DM Team would also make consultation submissions to the BD reflecting all accumulated changes made to the permanent works arising from those DAmS. However, such BD consultation submissions were not necessarily made at the same time as the working drawings were revised; they could be made to the BD subsequent to the working drawing revisions.
23. In case of discrepancies or insufficient information on the working drawings for construction, LCAL should seek clarification or request additional information from MTRCL (as the Engineer) through "*Request for Information*" ("RFI") forms submitted to the CM Team. Upon receiving the RFI form from the CM Team, the DM Team would co-ordinate with Atkins' Team A to prepare a response to the RFI. If site sketches were required in the response to RFI, they would be formally issued to LCAL via the CM Team by way of DAmS after the response to RFI.
24. Apart from changes to the permanent works proposed by LCAL, MTRCL might also propose amendments to the accepted detailed design on the permanent works and the procedures set out in paragraphs 21 to 22 above would also be followed.

25. I now append as “**Attachment 1**” a summary table setting out (a) the BD consultation submissions with respect to Areas B and C, (b) the dates and references of MTRCL’s submissions and (c) the dates and reference numbers of BD’s reply letters in response to the corresponding MTRCL’s submissions.
26. During the construction stage, LCAL was also required to carry out temporary works and prepare submissions on the design of such temporary works for consultation with the BD (through MTRCL). The submission of a temporary works design to the BD should be done separately from any submission of permanent works design submissions. Further, the design of any temporary works must be compatible with the permanent works consultation submission already submitted to BD, otherwise the temporary works design submission might not be accepted by the BD.
27. Once construction of the accepted design proposal commenced, the role of MTRCL’s DM Team and Atkins’ Team A diminished as the CM Team would take up the role of implementing the accepted design with the contractor. MTRCL’s DM Team’s role would shift to liaising with Atkins’ Team A on design amendments and submissions to BD arising from the construction works (including any temporary works designs prepared by the contractors). This is a typical arrangement in all SCL Project contracts, including Contract 1112.
28. At the end of the construction stage, the DM Team would ask the CM Team to advise on any changes to the permanent works made during the construction process that had not been reflected in the latest working drawings, so that a final round of amendment consultation submissions could be made to the BD before reporting completion of the works.

E. Development of the connection design between the EWL slab and the east diaphragm wall

29. On 13 July 2018, MTRCL issued a letter to the Railway Development Office (“RDO”) enclosing attachment diagrams showing the connection details between the EWL slab and the east and west diaphragm walls. I was not involved in the preparation of the 13 July 2018 letter to RDO, nor was I aware of the actual steel re-bar connection arrangement between the EWL slab and the east diaphragm wall as constructed during the construction stage. However, as the DM I now summarise the development and

history of the connection design between the EWL slab and the east diaphragm wall based on the records kept by the DM Team that I have been able to identify to date.

E1. First issue of working drawings relating to the RC connection between EWL slab and the east diaphragm wall

30. According to the BD submissions summary table in Attachment 1, the original detailed design packages for Areas B and C were accepted by the BD on 8 March and 25 February 2013 respectively. On 15 March 2013, Atkins' Team A issued a set of working drawings (Revision A).
31. The typical connection in Detail E (which was applicable to most connections between the EWL slab and the east diaphragm wall under the original detailed design) in working drawing no. 1112/W/HUH/ATK/C12/606 (Rev. A) indicated two layers of steel re-bars on the top layer of the EWL slab, all connecting between the EWL slab and the diaphragm wall using couplers. At the other end of these couplers were bent-bars providing anchorage within the diaphragm wall.
32. The other side of the diaphragm connected with the OTE slab and the steel re-bars were to be connected to the diaphragm wall re-bars using couplers.

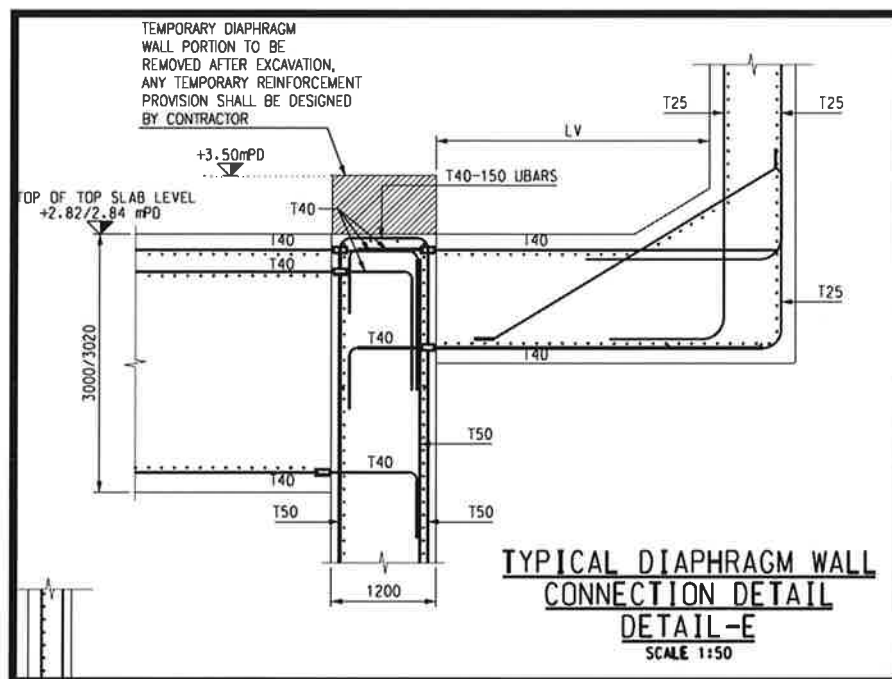


Figure 1 Detail-E in working drawing no. 1112/W/HUH/ATK/C12/606 (Rev. A)

33. Working drawing no. 1112/W/HUH/ATK/C12/607 (Rev. A) contained a coupler schedule and the original design of the roof slab (*i.e.* EWL slab) in Areas B and C was to have two layers of steel re-bar on top (T1 and T3).

E2. Construction of the diaphragm wall (around July 2013 to June 2015) and the PWD Report on diaphragm wall

34. During the construction of the diaphragm wall, LCAL made certain changes to the diaphragm wall reinforcement details at the connection with the EWL slab, including the omission of T40 U-bars at the top of the diaphragm wall panel and the re-arrangement of slab starter bars and couplers.
35. By email to Mr. Leo Wong (Design Liaison Representative of Atkins' Team A) dated 2 July 2013, LCAL sought comments on its shop drawings including these changes to the re-bar arrangement in of the diaphragm wall. This email was copied to MTRCL's CM and DM Teams. However, LCAL did not make any formal proposals to MTRCL in relation to such changes to the permanent works design in accordance with the procedures described in paragraphs 20 to 22 above. Accordingly, these changes were not submitted to the BD for acceptance in accordance with the consultation process and were not identified until the preparation of the Certificate of Completion of Works (conventionally known as "BA14 submission") which was submitted to the BD in January 2015 for the first batch of the diaphragm wall as-built drawings. I also only became aware of this change when we were preparing for the submission of the Certificate of Completion of Works in January 2015.
36. As a result of the changes of the reinforcement details in the diaphragm wall, Atkins' Team B and LCAL prepared a permanent works design report entitled "*Discussion on Design Amendment Works D-Wall*" (version PWD-059A3) (the "**PWD Report**") which was submitted by the DM Team to the BD on 30 July 2015. The PWD Report identified that the east diaphragm wall in Areas B and C did not have slab bars properly anchored into the diaphragm wall and that the wall steel bars were not lapped.

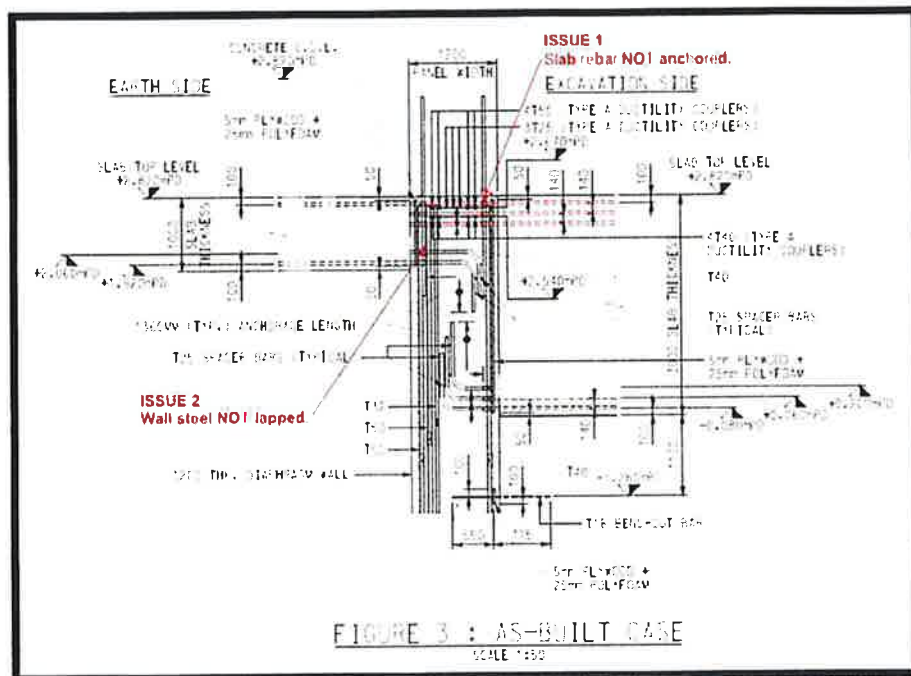


Figure 2 As-built diaphragm walls without U-bars and anchorage (from the PWD-059A3 Report)

37. The conclusion of the PWD Report contained the following statements relating to the connection between the EWL slab and the diaphragm wall:-
 - (a) *“Anchorage, which can be provided by extending the reinforcement into the OTE duct and re-sequencing the construction so the OTE is in place prior to excavation below the EWL slab.”*
 - (b) *“To comply with the full tension anchorage lap length (FTAL) from the slab rebar principle, the OTE wall must be concrete monolithically (i.e. at the same time) with EWL (3m) slab and the wall rebar to extend with full lap length (FLL) provision from the OTE wall construction joint (CJ) for future wall rebar connection.”*
38. This PWD Report did not mention any changes from the use of couplers to through bars. In fact, coupler connections were shown in all drawings and diagrams included in this report.

E3. Drawings Relating to the Connection Details between the EWL Slab and the East Diaphragm Wall

39. Based on the information and records that the DM Team can retrieve to date, I have the following findings on amendments to the working drawings relating to the connection details between the EWL slab and the east diaphragm wall (which I might not have handled personally at the time).
40. On 20 August 2015, LCAL submitted a set of EWL slab drawings for MTRCL's "review and incorporation into the working drawings" under CSF ref. 1112-CSF-LCA-DEM-000176. This set of drawings included the proposed connection between the EWL slab and east diaphragm wall to match with the re-arrangement of couplers as described in Section E2. The typical connection details at the east diaphragm wall were Detail E3 and E as shown on Drawing 1112/B/HUH/LCA/C12/605 and 606 respectively in this set of drawings.
41. The DM Team and Atkins' Team A reviewed the drawings submitted by LCAL. On 26 August 2015, the DM Team issued an advanced DAmS 310 to the CM Team by e-mail in relation to the drawings submitted by LCAL on 20 August 2015.
42. DAmS 310 included changes to many working drawings, including working drawings nos. 1112/W/HUH/ATK/C12/605 to 607. Revised drawing no. 605 and 606 of DAmS 301 contained new Detail-E3 and Detail-E which showed the typical EWL slab top rebar with three layers of T40 re-bars and couplers as in the drawing set from LCAL. Further, there was a remark that the "Section of OTE wall concrete cast together with (at the same time) as EWL slab"

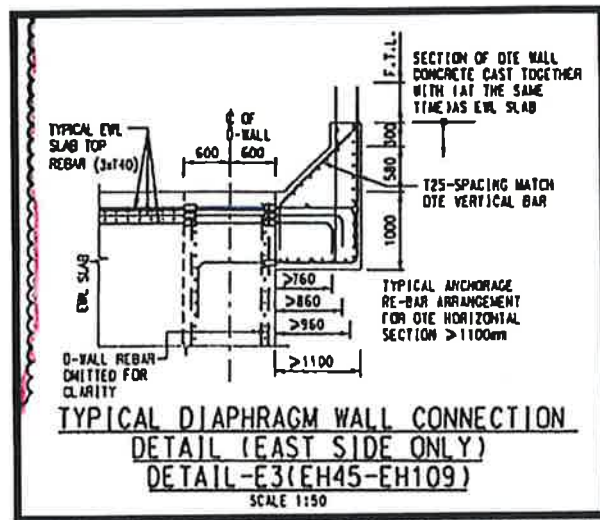


Figure 3 Detail-E3 in drawing 1112/W/HUH/ATK/C12/605 in DAmS 310

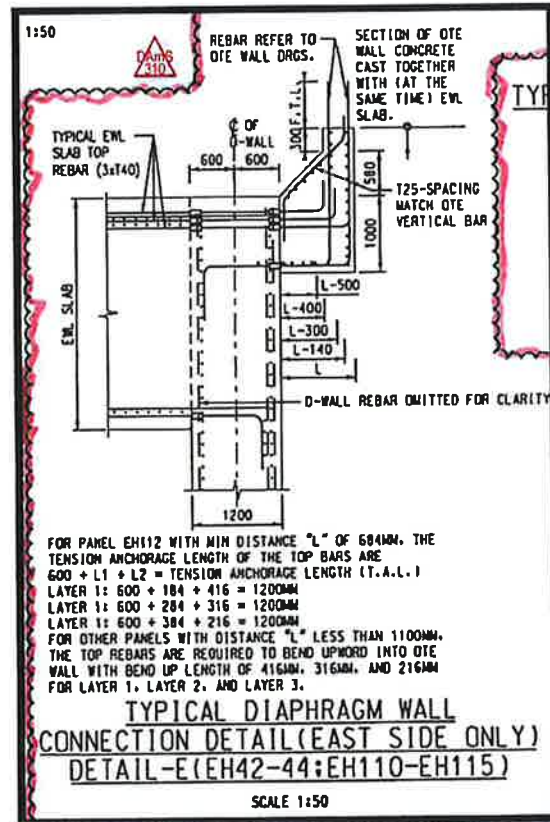


Figure 4 Detail-E in drawing 1112/W/HUH/ATK/C12/606 in DAmS 310

43. The coupler schedule for Area B in revised drawing no. 1112/W/HUH/ATK/C12/607 in DAmS 310 was also expanded and reflected the number of layers of couplers at the connection in Area B.

44. In relation to the coupler schedule for Area C in the working drawing, it was amended in the 8th and 9th amendment to the permanent works in Area C on 4 November 2015 and 11 February 2016 respectively and reflected in working drawings 1112/W/HUH/ATK/C12/833 and 834 (Rev. A) on 23 March 2016 under an advance DAmS No. 379 issued to the CM Team. The coupler schedule for Area C was amended only after the commencement of the EWL slab construction because of the time needed for LCAL to confirm the as-built coupler details in the diaphragm wall that were not formally submitted to MTRCL for BD consultation as described in Section E2..
45. The connection design of the EWL slab top re-bars according to the as-built coupler arrangement was confirmed in working drawings 1112/W/HUH/ATK/C12/605 to 607 as early as in DAmS 310 in August 2015. This arrangement was recorded in an email from the DM Team (Mr. Kevin Yip) to Atkins (Mr. Edward Tse) and copied to the CM Team and LCAL on 26 October 2015. In Item 4 of this e-mail, Mr. Yip pointed out that LCAL/CM Team had not confirmed the as-built extent and details of the coupler relocation, but it was clear that the coupler layers would be changed from two to three/four layers.
46. There were subsequent revisions to the working drawings but, in all cases, coupler connections in Detail E and E3 above were stipulated in the connection details between the EWL slab and diaphragm wall.

E4. Temporary Works Design Report TWD-004B3 (29 July 2015)

47. In addition to the permanent works design reports, the DM Team has also retrieved LCAL's temporary works design submissions. There was a temporary works design report TWD-004B3 entitled "*Design Report for HUH Station Primary Structure: Primary Slabs for Temporary Loadcases Area C (Grid 22 – 40) - BD Consultation Document*" ("**TWD-004B3 Report**"), which was submitted by MTRCL to the BD for consultation on 29 July 2015. The TWD-004B3 Report was prepared by LCAL and Atkins' Team B. I personally did not review this TWD-004B3 Report after LCAL submitted it to us. These temporary works submissions from contractors were normally handled by other members of the DM Team at the time, but the DM Team would not

expect any changes to permanent works would be embedded in any temporary works design submissions from contractors.

48. I have now revisited the TWD-004B3 Report. The main focus of the TWD-004B3 Report was to obtain BD's acceptance of the temporary excavation and lateral support (ELS) design of the EWL slab during excavation. That said, LCAL included submissions relating to change to permanent works, including Section 6.2 of the TWD-004B3 Report which reads:-

"Excavation for construction of the station roof slab (the EWL slab) will then commence incorporating a top level temporary prop to the diaphragm wall.

The top of diaphragm wall panel will be trimmed to the lowest level of top rebar for the EWL slab (min 420mm below the top level of EWL slab).

The top rebar of EWL slab at the D-wall panel will then fix to the top rebar of OTE slab to achieve full tension laps.

The EWL slab and OTE slab will be casted concurrently with temporary openings around the existing columns and pile caps."

49. However, LCAL did not include any drawings in this submission in relation to the above changes to the diaphragm wall in the TWD-004B3 Report, and nor did it submit any formal proposal afterwards. Further, the drawings included in Appendix H of the TWD-004B3 Report (such as drawing 1112/B/HUH/LCA/C12/755C) showed that couplers were to be used at the connection between the diaphragm wall and slab.

50. I have reviewed the records kept by MTRCL in relation to this series of temporary works design (TWD-004) and have the following findings:-

- (a) The DM Team did not receive the previous version of this TWD-004 report (*i.e.* TWD-004B2). We only received on 20 May 2015 a set of drawings which was attached to an e-mail from LCAL (Mr. Betty Ng) to Mr. Kevin Yip under the subject "*TWD-004B_Area C1 and C2 Slab Construction Drgs*". On the following day (21 May 2015), LCAL formally submitted the same set of drawings to the CM (Mr. Kit Chan) of MTRCL via Contractor's Submission Form ("**CSF**") 1112-CSF-LCA-DEM-000110.

- (b) On 8 December 2015, BD responded to our submission of the TWD-004B3 Report on 29 July 2015. In Appendix I of BD's reply letter, it was stated that:-

"15. It is noted that reinforcement details of permanent slab of the station have been included in this temporary works design submission. In order to avoid ambiguity, it is recorded that the said reinforcement details were submitted for information only and you are required to ensure the corresponding permanent station structure submission are fully compatible with this ELS design submission."

- (c) On 23 December 2015, MTRCL submitted a revised temporary works design report TWD-004C to BD. This TWD-004C was prepared by LCAL and only included submissions on temporary strutting of the ELS and the groundwater pump layout design. This report did not include any proposed changes to the permanent works design as set out in the TWD-004B3 Report.
- (d) On 23 March 2016, MTRCL submitted another revised temporary works design report TWD-004C1 prepared by LCAL to BD. The paragraphs mentioned in paragraph 49 above appeared again in Section 6.2 of this TWD-004C1 report, but no drawings were submitted in relation to such demolition works to the diaphragm wall in this TWD-004C1 report.
- (e) At the same time, LCAL provided its response to BD's comments on TWD-004B3 of 8 December 2015. In relation to BD's comments mentioned in (b) above, LCAL responded that *"Noted. The corresponding permanent station structure submission is fully compatible with this ELS design submissions."* This response was forwarded by MTRCL to BD by way of its letter dated 23 March 2016 (1112-COR-DM(SCL)-STO-001478).
- (f) On 28 April 2016, BD replied to MTRCL's submission of 23 March 2016. In item A4 of Appendix I to BD's letter, BD repeated its comment in identical terms.

51. I should also mention that I have reviewed the design reports on permanent works amendment submissions prepared by Atkins' Team A for submission by MTRCL to the BD. Such permanent works design reports included a section on *"Construction Sequence"*, but none of them contained similar paragraphs as in Section 6.2 of TWD-

004B3. Moreover, all working drawings issued to LCAL showed that steel re-bars at the connection between the east diaphragm wall and EWL slab were to be connected with couplers, and no demolition of the diaphragm wall (as suggested in Section 6.2 of TWD-004B3 Report in paragraph 49 above) was shown on those working drawings. In addition, LCAL did not make any formal proposals to MTRCL in relation to any demolition of the diaphragm wall.

E5. Two e-mails on 25 July 2015

52. I have been advised by MTRCL's legal advisors that other witnesses for MTRCL have referred to two e-mails exchanged on 25 July 2015. The first e-mail was an e-mail issued by me to Mr. Justin Taylor (Risk Manager of LCAL) on 25 July 2015 (10:49) under the subject "*RE: Updated OTE wall and EWL 3m slab connection requirement*" ("**First E-mail**"). The second e-mail was an e-mail issued by Mr. Rob McCrae (Technical Director of Atkins) to Mr. Brendan Reilly (Project Manager of MTRCL) on 25 July 2015 (14:05) under the subject "*Casting of EWL Slab*" ("**Second E-mail**"), which was copied to me.

First E-mail

53. In the First E-mail, I expressed the view to Mr. Justin Taylor that "*Portion of the wall should be cast together with the OTE slab as a good practice. Otherwise, one more CJ is introduced between them. I can't see how this CJ can be located given the width of the slab available.*" The background to my e-mail, as can be seen from the conversation appended below my e-mail, was that there was some confusion with the casting of the OTE wall. On the one hand Mr. Wan Cheung Lee of Atkins' Team B reminded LCAL in his e-mail on 24 July 2015 (16:20) that "*in order to comply with the design assumption, the OTE wall must be concrete / pour together at the same time (monolithically) with the 3m EWL slab and the wall to extend to 300mm above the chamfer section of the wall to provide the kicker for the OTE wall above*" whereas, on the other hand, Mr. Taylor understood from Mr. Torgeir Rooke (also from Atkins) that it was not the intention to "*cast the OTE wall*".
54. Against this background, I expressed my view to Mr. Taylor that the OTE wall (*i.e.* the wall standing upright on top of the OTE slab) should be cast together with the slab, such that the construction joint would be formed at the top of the OTE wall, rather than

in the OTE slab which is a cantilever structure. In any case, my e-mail did not indicate or imply the demolition of the top portion of the diaphragm wall.

Second E-mail

55. In the Second E-mail, Mr. McCrae of Atkins confirmed that, subject to the CP's views, the EWL slab between panels EM72 and EH74 could be cast in advance of the OTE on the understanding that the OTE would be cast before additional loading due to dewatering or excavation beneath the EWL took place. Such confirmation was specific to the case for panels EM72 and EH74, bearing in mind that the normal procedure as discussed at the time required the OTE structure to be cast before any excavation under the EWL slab could commence (see the extract from the PWD Report in paragraph 37 above).
56. I recall that such re-sequencing was necessary only for that particular location. In fact, in the e-mail from Mr. Brendan Reilly (Project Manager of MTRCL) to LCAL copied to Mr. James Ho of the CM Team and me on the same day at 14:39, Mr. Reilly expressly stated that *"Pls note the concession for the next EWL pour (only) – please expedite the concrete works for Mon/Tue."*
- E6. E-mails with CM Team in November 2017 and February 2018
57. As stated in paragraph 28 above, on 28 November 2017, Mr. Kevin Yip of the DM Team sent an e-mail to Mr. James Ho (Senior Construction Engineer), Mr. Joe Tsang (Senior Construction Engineer) and Mr. Wilson Lam (Senior Construction Engineer – BS) of the CM Team requesting them to confirm whether there had been any site changes which Atkins' Team A (DDC) would be required to incorporate into the final round of amendment to the permanent works submissions. On 29 November 2017, Mr James Ho confirmed that *"all permanent structures (HUH Consultation and Full BD Approval – Below Podium Level) were built in accordance with the permanent design drawings / clarifications advised by DDC. Even though there may be minor discrepancies identified we will carry out rectification to meet the design requirements."*
58. On 26 February 2018, Mr. Kevin Yip sent another e-mail to Mr. James Ho requesting Mr. Ho to confirm whether the as-constructed site works had any deviation from the *"1112 working drawings including the latest DAmS"* for the preparation of the

submission of as-built drawings of the EWL slab to BD. The following working drawings were appended to Mr. Yip's e-mail: 1112/W/HUH/ATK/C12/605/C, 606/D, 607/C, 608/A, 757/A, 833/A and 834/A. All of them showed typical steel re-bar connections between the EWL slab and east diaphragm wall with couplers.

59. On 27 February 2018, Mr. Ho responded to Mr. Yip that *"Further to our confirmation dated 29-Nov-17, we confirm once again that all permanent structures were built in accordance with the latest permanent design drawings / DAmS / clarifications advised by DDC. There are minor deviation we have identified which rectification being / will be carried out to meet the design requirements. Therefore please proceed with the as-built drawings preparation and submission to BD accordingly."*

E7. Weekly technical meetings with LCAL and CM Team

60. During the construction stage, there were Weekly Technical Meetings held between LCAL and MTRCL's CM and DM Teams between 2013 and 2016. The agenda for such Weekly Technical Meetings was prepared by the DM Team, and there was any agenda item on *"Contractor's proposals affecting permanent works"*. This agenda item was added to provide a forum for any design change proposed by LCAL to be discussed. However, I have also reviewed the minutes of the Weekly Technical Meetings but no proposals in relation to the demolition of the top portion of the diaphragm wall were mentioned or discussed in the Weekly Technical Meetings.
61. Finally, I would like to mention the following:
- (a) The events in question and which form the subject matter of the Inquiry took place several years ago and my recollection of every detail is not therefore perfect.
 - (b) Accordingly, in preparing this witness statement I have reminded myself of the events in question by reference to various hard copy and electronic documents and materials, including contemporaneous email correspondence, meeting minutes and contractual documents and other records. I understand these materials were retrieved by MTRCL's Legal Department, with the assistance of MTRCL's external lawyers Mayer Brown.

- (c) The hard copy documents were (1) extracted from physical files kept at the Hung Hom site office or the Hung Hom main office, (2) printed from MTRCL's ePMS or (3) printed from other electronic sources in response to the matters specifically raised by the COI or matters which were discussed in the course of preparing this witness statement.
- (d) I understand that MTRCL's Legal Department and external lawyers have recently established a database using software named *Relativity* which has captured a large amount of data from hard disk drives, including some of those that stored my emails and other electronic documents for the relevant period. I understand that they have commenced the process of identifying specifically relevant documents by use of search terms and date ranges and that this is an ongoing process due to a large volume of data. I have been given some of the documents identified from *Relativity* during the last week or so and commented on these in appropriate sections of this statement.
- (e) I would like to add, therefore, that there may be matters referred to or said in other documents which have not been recently placed before me. To that extent, I would be happy to comment on any such other materials at a later date if and when identified and placed before the Commission of Inquiry.

Dated the 14th day of September 2018



LEUNG FOK VENG

Corrigendum to the Witness Statement of Leung Fok Veng
dated 14 September 2018

Page	Paragraph	Content
B250	42	Replace “ <i>Revised drawing no. 605 and 606 of DAmS <u>301</u></i> ” with “ <i>Revised drawing no. 605 and 606 of DAmS <u>310</u></i> ”
B252	44	Replace “ <i>permanent works in Area C on 4 November 2015 and <u>11 February</u> 2016 respectively</i> ” with “ <i>permanent works in Area C on 4 November 2015 and <u>14 January</u> 2016 respectively</i> ”
B257	60	Replace “ <i>there was <u>any</u> agenda item on “Contractor’s proposals affecting permanent works”</i> ” with “ <i>there was <u>an</u> agenda item on “Contractor’s proposals affecting permanent works”</i> ”