

IN THE MATTER OF

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

2nd WITNESS STATEMENT

OF

JEAN-CHRISTOPHE, JACQUES-OLIVIER GILLARD

I, Jean-Christophe, Jacques-Olivier Gillard, of 20th Floor, Eight Commercial Tower, 8 Sun Yip Street, Chai Wan, Hong Kong say as follows:-

Introduction

1. I am duly authorised to make this, my second, witness statement on behalf of Intrafor Hong Kong Limited ("Intrafor").
2. I crave leave to refer to my 1st Witness Statement of 15 August 2018 [F1/32-102]. I gave that statement in order to respond to questions set out by the Commission in Lo & Lo's letters dated 25 July 2018 and 9 August 2018.

3. At the time that I gave my 1st Witness Statement, Intrafor's work on the diaphragm walls, apart from snagging, had been completed for a couple of years. Much of the project documentation had been archived and several key members of the project staff had either left the company or Hong Kong.
4. Intrafor is committed to assisting the Commission. Accordingly, my team at Intrafor has continued to retrieve documents and relevant information. In doing so, it became clear that some of my initial answers required correction or further explanation.
5. The need to correct certain parts of my 1st Witness Statement became clear whilst we were assembling documents for transmission to the Commission in the week of 20 August 2018. We immediately, and proactively, alerted the Commission to this in our letter of 22nd August 2018 [F4/2356-2359] and confirmed that we would resolve these matters by way of supplemental statement from me. Accordingly, I now make this second Witness Statement in order to do so.
6. In preparing this statement, I have been assisted by members of my team at Intrafor including those who were involved in the Project.
7. All references to paragraph numbers in this 2nd Statement are to the numbering in my 1st Witness Statement unless I expressly say to the contrary.
8. Where matters that I set out are within my own knowledge, they are true. All other matters are true to the best of my knowledge and belief. I confirm that if further material matters subsequently come to my attention, I will draw these to the attention of the Commission.

Paragraph 28 of my 1st Statement [F1/36]

9. Paragraph 28 (ii) contains a minor typographical error.
10. The words "up to" should be deleted from the sentence "*The height of the diaphragm walls required **up to** multiple re-bar cages to be assembled and connected vertically..*" [emphasis added]

Paragraphs 38 - 39 of my 1st Statement [F1/39]

11. These paragraphs from my 1st Statement of 15 August 2018 read as follows:

"38. *Once MTR, Leighton and Intrafor had all inspected the cages and connections, and were satisfied, all three parties signed a cage by cage inspection form. MTR, Leighton and Intrafor also signed a separate set of inspection forms confirming, on a coupler by coupler basis, that each individual coupler was satisfactory. These various signed inspection forms are included in the "Panel Records" maintained by Intrafor.*

39. *Intrafor has one of these "Panel Records" for each individual panel. Each Panel Record is a set of documents for the relevant individual panel that includes the relevant shop drawing, the Bar Bending Schedule, the cage by cage signed inspection sheets, and the coupler by coupler signed inspection sheets. A complete sets of these Panel Records will be provided to the Commission in a batch on 22 August 2018 when they have been bulk copied. In the meantime, I have exhibited some examples so that the Commission can see such nature of the documentation (Exhibit 5). Two of the samples that I have included are the panel records for the first (EM98) and the second (EH93) panels installed."*
12. By Intrafor's letter of 22nd August 2018, we alerted the Commission to the fact that these paragraphs would need to be corrected. We advised the Commission [F4/2358] that the matters needing to be corrected included:

- "(i) Paragraph 38 of the witness statement says that there are two sets of inspection records that are consistently signed off by MTR, Leighton and Intrafor. This is incorrect.*

Whilst there are two sets of inspection sheets, only one of these sets is consistently signed off by MTR, Leighton and Intrafor.

The set that is consistently signed off by MTR, Leighton and Intrafor is the cage-by-cage inspection forms that are included in the Panel Records (as to which see below) and which specifically confirm that the connections between cages have been inspected and are satisfactory. A complete set will be provided in the next batch when copying has been completed. Examples are in Exhibit 5 to Mr. Gilliard's statement.

The second set of inspection forms, the coupler by coupler sheets are not consistently signed off by MTR, Leighton and Intrafor. These coupler inspection sheets do not form part of the Panel Records (as to which see below) and are prepared by Intrafor for other purposes. There are some occasions where these forms have been signed by Leighton but most appear not to have been. We are still making internal enquiries about these forms and trying to locate a complete set. At this stage, we have located some but not all of these sheets.

- (ii) Paragraph 39 of the witness statement which states, amongst other things, that the "Panel Record" for each panel is a set of documents including the shop drawing, the Bar Bending Schedule and the cage-by-cage and coupler-by-coupler inspection sheets.*

In fact the coupler-by-coupler inspection sheets, the shop drawings and the Bar Bending Schedules strictly do not form part of the Panel Records. They are instead separate sets of documents that relate to the various panels."

Cage by cage inspection forms

13. I confirm that a complete set of the cage-by-cage inspection forms located by Intrafor has now been produced to the Commission as a part of the Intrafor Panel Records provided by Intrafor under cover of its letter of 29 August 2018 (wrongly dated 22nd August 2018) [F17/11173-11175].
14. The cage-by-cage inspection forms have been located for 251 out of 256 diaphragm wall panels. We have not, to date, been able to locate the cage-by-cage inspection forms for 5 panels (EH47, EH49, EM52, EM54 and EM102). I confirm that Intrafor will provide these 5 to the Commission if they are located.
15. As Intrafor drew to the Commission's attention, in its letter of 29 August 2018, the Commission will see that almost all of the connections between the cages have been signed off by Intrafor, and most by Leighton and MTR.
16. For the 251 panels for which the cage by cage inspection forms have been located to date, 236 panels have all of the cage to cage connections signed off by Intrafor. The remaining panels are only missing one or more Intrafor signatures. I believe that the missing signatures are due to slips in completing the forms. As far as I am aware, the forms were filled in and signed by Intrafor at the work face at the time of inspection.
17. I have confirmed what happened on site with K W Tang, who is the primary engineer from Intrafor responsible for the supervision, checking and inspection process, K.W. Tang. Intrafor supervised, checked and inspected each and every coupler and cage connection. K W Tang was full time on site and full time in this role. He also was one of Intrafor's T3 equivalents as Quality Control Coordinator for couplers.

Coupler by coupler inspection sheets

18. I can confirm that the coupler inspection sheets do not strictly form a part of Intrafor's Panel Records.
19. Instead, the coupler inspection sheets comprised one part of the 'log book' required to be kept under the BD requirements in Appendices VIII and IX of BD's letter reference BD RAIL/30SCL/02-1112(S) (**Exhibit 21**) and the associated BOSA Quality Supervision Plan (**Exhibit 16**). The 'log book' was an umbrella term for a collection of several different types of records including the coupler inspection sheets and the BOSA Quality Supervision Plan.
20. The 'coupler inspection sheets' were kept in Intrafor's site office and was available to both Leighton and to MTR. They were also made available for audit by BD.
21. There were two types of coupler inspection sheets: one type of form for ductile couplers, and another for non-ductile couplers. The detailed format of these sheets varied to a limited extent over time. They were filled in by Intrafor to confirm that they had supervised, checked, and inspected each and every coupler connection.

They were usually filled in at the site office just after the cage to cage connections had been finally inspected and confirmed as satisfactory by Intrafor. On some occasions, however, they may have been completed shortly afterwards.

22. As set out in Intrafor's letter to the Commission of 29 August 2018, we have not been able to locate the coupler inspection sheets in their entirety for four panels (EM52/EH78/EM102/WH85+WH87). We have also not been able to find a full set of coupler inspection sheets for a further 27 panels – that is to say that we have located some but not all of the sheets for those panels.
23. Intrafor's T3 equivalents, who were acting as the Quality Control Co-ordinators, signed most of the coupler inspection sheets.
24. I have confirmed what happened on site with K.W. Tang. Intrafor supervised, checked and inspected each and every coupler and cage connection.
25. About half of the coupler inspection records were signed by Leighton although there was no requirement for them to do so.
26. As I understand it, there was also no ongoing requirement for the Intrafor coupler inspection sheets to be signed by MTR. The Quality Control Supervisor, who came from MTR under the Competent Person stream in Appendices XIII and IX, was, however, required to inspect 20% of the connections.
27. Intrafor's coupler record sheets were later summarised in a series of coupler summary sheets. These summary sheets are themselves signed by Intrafor's T4 and AS under the RSC stream and by MTR's T5 and the Competent Person under the CP stream respectively.
28. I understand that MTR's Competent Person then attached these summary sheets¹ to his Quality Supervision Reports (QSR). I understand that these QSRs were then submitted by MTR to BD as required under Appendices VIII and IX of BD's letter.

Panel Records

29. Intrafor's Panel Records consist of two distinct sets of documents:
 - (i) a Panel Record Summary Sheet; and
 - (ii) various contemporaneous records including the cage-by-cage inspection forms, concreting records, verticality test records etc.
30. The Panel Record Summary Sheets are themselves not contemporaneous records of work done. They are simply a summary or presentation of raw data drawn from the contemporaneous records. It is the contemporaneous records themselves (such as

¹ A set of the summary sheets can be found at pages H10 /4837-5154.

the cage to cage connection drawings, the verticality test results, concrete pour records etc.) that record what has actually been done on site.

31. Intrafor's Panel Records were provided to Leighton progressively during the Project. Leighton compiled their own Panel Record Summary Sheets from the records and documents provided to them by Intrafor.
32. Once again, the Leighton Panel Record Summary Sheets are not contemporaneous records of work done. They are simply a summary or presentation of raw data drawn from the contemporaneous records. It is the contemporaneous records themselves (such as the cage to cage connection drawings, the verticality test results, concrete pour records etc.) that show what has actually been done on site.
33. Leighton sent its Panel Record Sheets to Intrafor and Intrafor signed them as requested. At the time that Intrafor signed the Leighton Summary Sheets, it was not appreciated that there were several differences in approach between the Intrafor and Leighton Summary Sheets. These differences were generally caused by both teams having a different interpretation of what data should be captured in the summaries, and how it should be described. The underlying raw data from the contemporaneous records was common.
34. As Intrafor has indicated in its letter of 29 August 2018 to the Commission, the Panel Records provided to the Commission include both the Intrafor and Leighton Panel Summary sheets where these have been located.
35. As Intrafor also indicated in its letter of 29 August 2018, a set of incoming Leighton Panel Record Summary Sheets had been located in Intrafor's system shortly before the letter was sent to Lo&Lo. At the time it was thought that this set might be a complete set of Leighton's Panel Record Summary Sheets but Intrafor said it would check this further.
36. Having checked, this additional set of Panel Records were sent by Leighton to Intrafor under cover of a transmittal dated 15 June 2015. They are an incomplete set of Leighton's Panel Record Summary Sheets that have been signed by Intrafor and then counter-signed by MTR. I enclose, for completeness, a copy of these MTR signed Leighton Panel Records Summary Sheets as Exhibit 31.
37. As I have explained above, there were a number of discrepancies between the original Intrafor Panel Records Summary Sheets and the Leighton Panel Records Summary Sheets. These differences were generally caused by both teams having a different interpretation of what data should be captured in the summaries, and how it should be described. There were, however, also some typographical errors and some signatures missing.
38. These discrepancies and issues were the focus of a lengthy and detailed reconciliation exercise undertaken in 2015 and 2016 at the time that MTR was submitting as-built information to BD for checking and approval.

39. Intrafor only had limited involvement in the preparation of As-Built material for MTR to submit to BD. Intrafor was not, for example, involved in preparing the As-Built submissions² to be sent by MTR to BD. Certain of the as-built documents prepared by Leighton and/or MTR were, however, commented upon by Intrafor and signed by the AS. Intrafor was not responsible for dealings with BD itself.
40. This process of resolving discrepancies and issues for Batches 1-5 was carried out primarily by Leighton and MTR.
41. In relation to the Panel Record Summaries, Leighton and MTR advised Intrafor what corrections that they wished to have made to resolve discrepancies and errors in the Summary Sheets. The solutions proposed by Leighton and MTR generally involved either adopting a different definition or method of presentation but sometimes involved correcting typographical errors or the like.
42. Importantly, the process concerned the presentation of data in the Summary Sheets and not the correction or amendment of the raw data itself in the contemporaneous records.
43. Intrafor was told that the changes and corrections would be made by Leighton directly onto the as-built drawings without an intermediate step of producing yet another version of the Panel Record Summary Sheets.
44. Leighton and MTR would explain to Intrafor what the changes, corrections and solutions being proposed were. They would also provide Intrafor with draft Drawings. Intrafor then checked this material to verify that it was consistent with the Intrafor's as-constructed records and works. Intrafor would identify where further changes needed to be made. Once Intrafor, Leighton and MTR approved the changes and corrections to be made, they were recorded in revised As-Built Drawings and endorsed by Intrafor's AS.
45. Intrafor's AS then confirmed in letters addressed to Leighton and to the CP for each of Batches 1-5 that the As-Built records had been reviewed in light of the discrepancies and errors, and that the revised As-Built records were true and correct records for the diaphragm walls constructed. I understand that Leighton also wrote in similar terms to MTR.
46. The Competent Person in turn wrote in the same terms, for each of batches 1-5, to BD, enclosing a package of supplemental information to BD in relation to the As-Built Drawings / Record Plans for the Diaphragm Wall. Whilst Intrafor was not involved in this, I understand, from copies that I have seen, these packages included, amongst other things, the various letters that I have described above together with an explanatory note (Attachment 1) summarising the findings from the review process

² Intrafor did not prepare As-Built Drawings of the Diaphragm Wall Works. These As-Built Drawings were prepared by Leighton. Intrafor prepared, and sent to Leighton, As-Built Diaphragm Wall developed elevations that showed the work carried out by Intrafor.

that I have described above and giving illustrations of the sorts of discrepancies that had been found and resolved. Copies of these are in Exhibit 32.

47. Ultimately, therefore, the various sets of Panel Record Summaries for Batches 1-5 were superseded by the As-Built Drawings and information in the package of supplemental information submitted to BD.
48. The position in relation to the final batch of As-Built submissions, Batch 6, is somewhat different to Batches 1-5. This is because Batch 6 had not yet been submitted to BD by the time that the solutions to the discrepancies and errors in the previous Batches 1-5 had been communicated to Intrafor by Leighton and MTR.
49. Intrafor therefore prepared a replacement set of Panel Record Summaries for Batch 6 to supersede the original versions. This replacement set of Panel Record Summaries for Batch 6 implemented the solutions adopted in resolving the issues with the (earlier) Batches 1-5. These replacement Panel Record Summaries for Batch 6 were sent to Leighton on 4 December 2015 under cover of transmittal TR990. I believe that these replacement Panel Record Summaries for Batch 6 were agreed and used by Leighton and MTR. Copies of these replacement Panel Record Summaries for Batch 6 are in Exhibit 33. These have only recently been located and so have not previously been provided to the Commission.

Consequential corrections to other paragraphs in my 1st Witness Statement

50. The corrections and clarifications that I have set out above (with respect to the cage inspection forms, the coupler inspection sheets, and Panel Record Summary Sheets) apply equally to a number of other paragraphs in my 1st Witness Statement.
51. I would ask that the following paragraphs and references in my 1st Witness Statement be read in light of the corrections and clarifications that I have set out above:

<u>Paragraph in 1st Witness Statement</u>	<u>Correction / clarification</u>
Paragraphs 40 – 42 [F1/F39-F40]	Please see the correction and clarifications set out above in relation to cage inspection forms and coupler sheets.
Paragraphs 43 [F1/F40]	Please see the correction and clarifications set out above in relation to cage inspection forms, coupler sheets, and panel record summary sheets.
Paragraph 70 [F1/F45]	Please see the correction and clarifications set out above in relation to cage inspection forms and coupler sheets. I would note, however, that the cage inspection forms for Panel EM98 show

	each and every connection having been signed off by each of Intrafor, Leighton and MTR. Copies of the inspection forms for Panel EM98 are in Exhibit 5 .
Paragraph 72 (ii) [F1/F46]	Please see the correction and clarifications set out above in relation to cage inspection forms and coupler sheets.
Paragraph 81 [F1/F48]	Please see the correction and clarifications set out above in relation to cage inspection forms and coupler sheets.
Paragraph 87 [F1/F49]	Please see the correction and clarifications set out above in relation to cage inspection forms and coupler sheets.
Paragraph 159 [F1/F72 – F73]	Please see the correction and clarifications set out above in relation to cage inspection forms, coupler sheets and panel records summary sheets.
Paragraph 236 [F1/F87]	Please see the correction and clarifications set out above in relation to cage inspection forms, and coupler sheets.
Paragraph 269[F1/F93]	Please see the correction and clarifications set out above in relation to cage inspection forms, and coupler sheets.
Paragraph 275 [F1/F95]	Please see the correction and clarifications set out above in relation to cage inspection forms.
Paragraph 295 [F1/F101]	Please see the correction and clarifications set out above in relation to cage inspection forms.

Paragraph 72 of my 1st Witness Statement [F1/F46]

52. The reference in paragraph 72(v) to “Exhibit 28” should read “Exhibits 28 and 29”.

Paragraphs 120, 124 and 125 of my 1st Witness Statement [F1/F56 – F59]

53. I would like to correct three of the job descriptions set out in those paragraphs, by adding the wording underlined below:

“120. Site Agent / Sub Agent:

- *Organizes and coordinates the site operations including line management of engineers, Superintendent and Senior Foremen and with production management of main contractor, and management of suppliers and subcontractors to achieve programme and minimise delays/problems.*
- *Monitors the execution of methods, supply of resources and materials, and inspections of work."*

"124 Superintendent (Person of greater experience than Senior Foreman)

- Reports to Site Agent
- Organises and manages Senior Foremen and coordinates their daily works assignments. "

"125 Senior Foreman

- *Report to and assist the Superintendent*
- *Organise and supervise the foremen responsible for the different production activities (e.g. guidewall construction, excavation, spoil removal, bentonite supply, reinforcement cage fabrication and installation, concreting, maintenance)*
- *Oversee all human and plant resources on site.*
- *Coordinate with Site Engineers and Surveyors to ensure that inspection and test requirements are completed.*
- *Ensure requirements, including health and safety precautions, are undertaken in line with the approved methods statements, ITP's and Risk Assessments."*

Paragraph 132 of my 1st Witness Statement [F1/F60]

54. We have identified, from day work sheets, another 12 workers from Hung Choi that were involved in steel fixing works. We have identified for one of these the date he started on site but have been unable to identify the equivalent dates for the other 11. Separately, we have also identified earlier start dates for 5 other workers than previously thought. An updated list of workers is in Exhibit 34.

Paragraph 206 of my 1st Witness Statement [F1/F81]

55. The penultimate sentence of paragraph 206 says:

"A copy of all of the correspondence between Intrafor and Leighton concerning snags / defects clearance that has been located to date is in Exhibit 28."

56. The relevant correspondence is in fact to be found in both Exhibit 28 and Exhibit 29.

Paragraph 226 of my 1st Witness Statement [F1/F85}

57. The types of problem encountered in the early stages of steel fixing are further illustrated by comments made by Intrafor's steel fixing sub-contractor, Hung Choi, on the back of day works sheets. Copies of these day work sheets are in Exhibit 35.

Paragraph 268 of my 1st Witness Statement [F1/F93}

58. The word "hold" in the third sentence of paragraph 268 should read "witness".

Paragraph 269 of my 1st Witness Statement [F1/F93}

59. I understand that 100% of the cages and connection in relation to the diaphragm wall were systematically inspected by Leighton and MTR as required in accordance with the approved processes under the Subcontract.

In the absence of some of the signatures from Leighton and MTR on the cage to cage records, however, I cannot exclude the possibility that some connections may not have been inspected by MTR and/or Leighton. Based on our enquiries, I have no reason to doubt that all cages and connections were properly supervised and checked by Intrafor.

In addition, I should add that the connections between cages are properly "witness" points under the IATP rather than "hold points".

It is not entirely clear in light of this, whether MTR is required under the Sub-contract to inspect 100% of cage connections or not. In practice, however, they appear to have participated in these inspections. The "hold point" is the approval of the entire cage prior to concreting.

In addition, I note that MTR's Quality Control Supervisor was only required, under the QSP and Appendices VIII and IX, to inspect (a) weekly and (b) at least 20% of the coupler connections. Leighton was not required to inspect couplers under the QSP. In practice, however, Leighton participated in these couplers' inspections under the QSP.

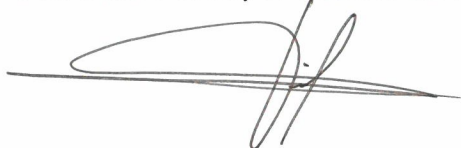
Paragraph 294 of my 1st Witness Statement [F1/F100 – F101}

60. In paragraph 294, I explain:

"Intrafor constructed, and completed, the diaphragm walls in accordance with the designs provided. The East diaphragm wall was constructed and completed to the full height specified in the design – with cut-off level ranging between +4.37m to +2.01m. Starter bars with couplers were installed and inspected in the manner that I have described in sections one and two of my statement."

61. This paragraph is correct save in relation to five panels (EH 104, EH105, EH 106, EH 108, and EH 109) in Batch 6 that were cast in April and May 2015. Intrafor built and installed the re-bar cages to their full height for these five panels. Intrafor, however, was instructed, after the issue of the shop drawings, to pour the concrete only to a level of around +2.0mPD for panels EH 104, 105, 108 and EH109. Intrafor did so, leaving the re-bar cage intact and its full height.
62. The instructions to pour the concrete to the reduced heights were not given by way of a formal site instruction or similar. They are, however, evidenced in writing by way of emails and, in the case of EH 104, by a manuscript note on the concrete pour record. Copies of these emails and the concrete pour record are in Exhibit 36.
63. The lower height of the pour was missed in the As-Built Diaphragm Wall developed elevation drawings ("the Drawings") for these panels prepared by Intrafor's head office design team. To be clear these Drawings are in fact not submitted to BD but primarily serve as a record of collected rock head level, collected founding level, rock socket length, and as built founding level, between Leighton and Intrafor. Leighton produced the As-Built drawings. The Drawings also depict the design cut of level shown on the shop drawings for these panels, vis a vis, +2.8m. Copies of the shop drawings, Drawings, and Leighton As-Built drawings for these panels are in Exhibit 37.
64. The fact that the concrete for these five panels was poured only to the reduced heights is, however, recorded both in Intrafor's original Panel Record Summaries for these panels and also in Intrafor's replacement Batch 6 Panel Record Summaries for these panels. Copies of these Panel Record Summaries are in Exhibit 38.
65. In terms of sequence, Intrafor's original panel record summaries for the panels were produced first, followed by the As-Built elevation drawings for the panels. The replacement Batch 6 Panel Record Summaries for these panels were created last, after the As-Built elevation drawings.

Dated this 9th day of October 2018



Jean-Christophe, Jacques-Olivier Gillard

Corrigendum to the Witness Statement of Jean-Christophe,
Jacques-Oliver Gillard dated 9th October 2018 (“2nd Statement”)

Page	Paragraph	Content
F19767	46	Move “Copies of these are in Exhibit 32” from the end of Paragraph 46 to the end of Paragraph 45
F19768	46	Add “Copies of these I now note are included in COI bundle B5/TS 6325-6509, B5/TS 8841-8961, B5/TS 15718.1-15718.223, B5/TS 15719-15840 and B5/TS 20067-20198” at the end of Paragraph 46
F19771	59	Insert quotation marks at the first paragraph of Paragraph 59 which is the direct quote from the 1st Statement
F19772	61&62	Amend references to “EH 104” to “EM 104”


F19772.1