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<p>1 Monday, 17 December 2018 2 (10.01 am) 3 CHAIRMAN: Just before we begin, I just wanted to say 4 something very briefly. 5 Apparently, on Friday evening, there was a report in 6 the media to the effect, I think, that a witness who had 7 been before the Commission had used the rear entrance, 8 and that meant had walked into or come close to where 9 myself and Prof Hansford have our offices. 10 I just wanted to make it clear at the outset, in no 11 uncertain terms, that the arrangement was that all 12 witnesses would come into the front entrance and would 13 leave via the front entrance. This was a very minor 14 administrative error. We never saw him. We were never 15 aware of his presence. And I think you can take it from 16 us that we would never, under any circumstances, without 17 everyone knowing fully what was happening, see anyone 18 who was giving evidence before this Commission. I just 19 wanted to make quite clear. 20 MR PENNICOTT: Thank you, sir. May I just say, on behalf of 21 the legal team of the Commission, we were wholly unaware 22 of this incident either until media reports later that 23 evening. 24 CHAIRMAN: Thank you. 25 Mr Khaw.</p>	<p>1 A. Yes, that's my signature. 2 Q. Could you also please confirm that the contents of this 3 witness statement are true to the best of your 4 knowledge, information and belief? 5 A. Yes, I can do that. 6 Q. There's just one question I would like you to address, 7 and that is if I can take you to one paragraph of 8 Prof Frederick Ma's witness statement. It's at B1, 9 page 111. Starting from paragraph 30, Mr Chan, if we 10 can take a look -- paragraph 30 says -- this is 11 Prof Frederick Ma's evidence: 12 "On Sunday 5 August 2018, I received a request to 13 meet with the Chief Executive ... the following morning. 14 On 6 August 2018, I met with the Chief Executive as 15 scheduled. The Secretary for Transport and Housing, 16 Frank Chan was also present. In the meeting, the Chief 17 Executive mentioned to me that the government had lost 18 confidence in the project management team of the SCL. 19 The Chief Executive told me that government took the 20 view that the senior members of the projects team 21 responsible for the SCL ... namely Dr Philco Wong, 22 TM Lee, Aidan Rooney, Jason Wong and also Lincoln Leong 23 should leave [the MTR]." 24 Do you see that? 25 A. (In English) Yes.</p>
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<p>1 MR KHAW: Thank you, Chairman. The government's next 2 witness is the Secretary for Transport and Housing, 3 Mr Chan, who is now sitting at the witness seat. 4 Mr Chan, just to confirm your full name is Chan Fan; 5 is that correct? 6 WITNESS: (In English) Yes, that's correct. 7 MR CHAN FAN, FRANK (affirmed in Punti) 8 (All answers given via simultaneous interpreter 9 except where otherwise specified) 10 Examination-in-chief by MR KHAW 11 MR KHAW: Mr Chan, would you like to give your evidence in 12 Cantonese or English? 13 A. Cantonese. 14 Q. For the purpose of this Commission of Inquiry, you have 15 made one witness statement. If we can take a look at 16 G3. It starts at page 1751. 17 A. That's correct. 18 Q. It consists of I think about 17 pages. It ends at 19 page 1767. 20 A. Correct. 21 Q. It's a statement dated 7 September this year; do you see 22 the date? 23 A. Yes, I can see it. 24 Q. We can see there's a signature put at the end of this 25 page. Can you confirm that this is your signature?</p>	<p>1 Q. In fact Prof Frederick Ma, when he gave evidence, was 2 also asked to comment on this paragraph. 3 If I may, could you tell us the reason or reasons 4 why the government lost confidence in the MTR's project 5 management team at that time? 6 A. Chairman, if I may offer a more detailed explanation. 7 Confidence in the team depends on a number of factors. 8 First, the track record, the performance of that team, 9 in handling the SCL project. Secondly, if in the past, 10 if there were mistakes committed by this team, then we 11 will look at the magnitude of that error or mistake. 12 And also we would need to take forward the SCL whatever. 13 So we would have to make sure that the SCL could be 14 completed as scheduled. We have to consider all these 15 factors in regard to that question. So that is to say 16 track record in past performance, and also we know that 17 on 15 June the MTRCL, in respect of the SCL diaphragm 18 wall platform slab, submitted a report. The 19 government's understanding was that it was a report on 20 the facts, and also a report based on their records. We 21 expected that would be -- the investigation report which 22 had been put together stringently and certainly should 23 be accurate. 24 Our colleagues reviewed the facts reflected in that 25 report, and on the site, when we checked the technical</p>

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<p>1 drawings, we saw signatures and dates shown. 2 Given such circumstances, we had reason to believe 3 that the report reflected the truth. However, 4 afterwards, after that, our colleague had to carry out 5 some load test and we had to review the proposal coming 6 from the MTRCL, to see if the checker would be 7 reasonable and could address concerns and can ensure 8 structural safety. 9 In that process, we worked with the MTRCL team to 10 follow up. At that point, the MTRCL team did not tell 11 us that the design was somehow amended and modified. 12 Then, on 13 July, the MTRCL made a proposal on the load 13 test, and then there were three attachments which are 14 attachments A, B and C. In attachments B and C, we saw 15 that the design pertaining to the structure was at 16 variance with the original one, to a great degree. The 17 MTRCL did not tell us beforehand that there was such 18 a change. 19 If the MTRCL team failed to detect that 20 discrepancy -- sorry, if they managed to detect that 21 discrepancy, then the report wouldn't have been worded 22 like this. That's why we asked them to produce or to 23 present the drawings, and then we came to realise that 24 the relevant design modifications were not carried out 25 with drawings and there was no as-built drawings</p>	<p>1 mistakes or omissions on their part, so that we can no 2 longer hold trust in the team. We were also concerned 3 about the structural safety of Hung Hom Station in 4 respect of the structures, the platform and the other 5 works. This would be an important factor, important 6 indicator, that we need to take into account. If 7 there's anything that may affect public safety or 8 structural safety, it would certainly not be acceptable 9 to us. 10 We cannot accept such mishaps on the part of MTRCL, 11 and as I've said, we would have to take forward SCL in 12 any case, because this is a very important strategic 13 infrastructure project for the government. It would 14 link up the Ma On Shan Line to the West Rail Line and 15 reaching the north of Hong Kong Island and also all the 16 way to Admiralty. It's very important for our future 17 transport network. So we would have to continue to 18 press on with the project. 19 But as I've said, we look at the past track record, 20 the magnitude of the problem, and we asked whether we 21 should continue to rely on the same team to take forward 22 the project. We had great reservations at that point. 23 That is why we made public that we lost confidence. 24 That is a fact. But behind that fact, we had considered 25 many things. We considered what happened, the scale of</p>
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<p>1 prepared for that. 2 So our concern at that point was if on 15 June 3 report and if the drawings that we saw were correct, 4 then what's the status of the 13 July report or was it 5 accurate? We saw some sketches. If those sketches were 6 accurate, then we will have a lot of concerns and 7 reservations about the previous report in June, as well 8 as the authenticity of the drawings that we saw on site 9 with the signatures and the dates shown on drawings. 10 So, if you have heard me out, you would certainly 11 have reacted like me. If we have entrusted a team, 12 a project to such a team, and if that's the performance 13 they have delivered, then you would wonder whether the 14 basis of trust is still there. 15 Of course we have been describing the facts as we 16 are presented. We don't want to make any accusation 17 without evidence, and we don't want to make any 18 one-sided allegation. So we have been acting with a lot 19 of restraint. We have just been informing the public of 20 facts which are not in dispute. Of course, in the 21 course of the dealings, we have other observations and 22 we have other views; that's another level, that's 23 another matter. 24 In respect of the performance of the MTRCL 25 management team, we wonder whether there were any</p>	<p>1 what happened, the impact on the public, and whether we 2 would have enough evidence to ensure that the project 3 would be completed on schedule and whether it would be 4 built to specifications. These are our considerations. 5 MR KHAW: Thank you, Mr Chan. I have no further questions 6 for you. So now counsel team acting for the 7 Commission -- I suppose it should be Mr Pennicott 8 today -- will be asking you some questions. Lawyers 9 acting for the other parties may also ask you some 10 questions. In the meantime, Chairman and Commissioner 11 would also like to ask you some questions. And finally 12 we will see whether it is necessary for me to ask you 13 any other questions. 14 So please be seated. Thank you. 15 Examination by MR PENNICOTT 16 MR PENNICOTT: Good morning, Mr Chan. 17 A. (In English) Good morning, Mr Pennicott. 18 Q. As Mr Khaw has just indicated, as one of the counsel to 19 the Commission, I get to ask you a few questions first. 20 Indeed, it is only a few questions -- I'm not going to 21 detain you very long -- and indeed, given the answer 22 that you've just given to Mr Khaw, I have even less 23 questions than I had before. 24 In terms of, Mr Chan, the role of the Transport and 25 Housing Bureau in the SCL project, as I understand it,</p>

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<p>1 really it was a general oversight and monitoring role 2 that the bureau had; is that right? 3 A. What you said is a fact, but apart from that -- well, 4 yes, we do overall monitoring and oversight, but 5 actually we also have the responsibility that the 6 project would be carried out smoothly, that there would 7 not be any budget overrun, that it should be completed 8 on schedule, and also its quality and safety must be 9 ensured. 10 Q. Yes. And Rebecca Pun, one of your colleagues -- 11 A. (In English) Yes. 12 Q. -- who has not been required to give evidence in the 13 Commission, explains that that oversight and monitoring 14 role focuses, as you have just indicated, on progress 15 and cost primarily, and the vehicle through which the 16 bureau does that is through, primarily again, project 17 supervision committee meetings. Is that right? 18 A. Basically, together with the Highways Department, we 19 held monthly meetings. You mentioned the project 20 supervision committee. That is a committee chaired by 21 the Director of Highways. 22 At the bureau level, on a monthly basis, I have 23 regular meetings with all executing departments, we 24 review their work, and also on matters of public concern 25 or whether there are strategic or political issues we</p>	<p>1 had the responsibility to show the public that the 2 construction was in line with structural safety and 3 public safety. That is why we wanted to have a load 4 test conducted, so that the public could see that the 5 construction was in line with requirements and it was 6 safe to use it. That was our thinking at that time. 7 Q. Yes. As I understand it, Mr Chan, the underlying 8 assumption, when requesting the load test, was that it 9 was known what was there, as it were, how the slab had 10 been built, how the connections had been made, and that 11 was the assumption you made in requesting a load test? 12 A. That's correct. 13 Q. All right. As matters have unfolded, the load test has 14 really been put on the backburner and in favour of, as 15 we now know, an opening-up process? 16 A. That is right. As, Mr Pennicott, you said just now, at 17 that time we assumed that the construction details were 18 clear and clearly recorded, but afterwards, with the 19 15 June report and also the 13 July letter, we found 20 that even today we still do not know the actual 21 construction. That is why we decided that with regard 22 to parts of the slab and other works, we had to break up 23 the concrete to review the procedures. We want to be 24 100 per cent sure of all the construction details before 25 we would consider again whether the load test would be</p>
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<p>1 would hold detailed discussions on those. 2 Q. Yes, understood. The reason that the bureau is involved 3 in this monitoring role is because the Highways 4 Department has the Railway Development Office within it, 5 and the execution of, for example, the entrustment 6 agreements is left to the RDO on behalf of the bureau? 7 A. That is correct. 8 Q. And, as we have seen, the RDO has a BO team, as it's 9 called, made up of a small number of RDO engineers, 10 supplemented by Buildings Department seconded engineers, 11 together with the M&amp;V consultant providing a BSRC team 12 to assist? 13 A. That is correct. 14 Q. Switching topics slightly now, Mr Chan -- when the media 15 attention to contract 1112 in particular blew up in late 16 May/early June of this year, the initial reaction of the 17 government, with which I think you were involved, was to 18 instruct the MTR to carry out a load test on the 19 platform slab that was then primarily in issue. That is 20 right, isn't it, Mr Chan? 21 A. That is correct. At that time, our understanding was 22 that the MTRCL told our colleagues that the discrepancy 23 was already rectified and that they were of the view 24 that the construction was still aligned with the 25 requirements and the safety standards. That is why we</p>	<p>1 necessary, and if necessary how it should be conducted, 2 because without knowing the construction details and 3 going ahead with the load test, there will be a risk 4 involved. 5 Q. Yes. Could I then just briefly -- because you have 6 dealt with this in some detail already, Mr Chan -- deal 7 with the events of 5, 6 and 7 August 2018. 8 A. (In English) Yes. 9 Q. As you have indicated and as indeed you say in 10 paragraph 33 of your witness statement, there was 11 an emergency meeting called by the Chief Executive on 12 5 August, which was a Sunday. 13 A. (In English) Yes. 14 Q. As I understand it, you were present, together with the 15 Director of Highways? 16 A. Correct. On Sunday, together with the Director of 17 Highways, we attended that meeting. 18 Q. Was it just the two of you, the Director of Highways 19 and, as it were, the Director of the THB, or were there 20 other people present? What I'm trying to find out was 21 who was actually doing the briefing, Mr Chan? 22 A. Okay. I understand your concern. But I hope I will 23 provide all the information I know. However, I have to 24 do so under the mechanism of keeping the internal 25 discussions of government confidential.</p>

<p style="text-align: right;">Page 13</p> <p>1 Mr Pennicott, you mentioned Sunday and those who 2 were involved in the meeting. Apart from me and the 3 Director of Highways, there were other colleagues of 4 government, and some of them were outside the TH Bureau; 5 they were from other bureaus. But as to the names of 6 the people involved, I don't know whether I should 7 disclose them and whether it is necessary for me to 8 disclose them at the hearing today. Please instruct. 9 Q. No, it is not necessary. I just want to know: there was 10 a group of government officials in addition to yourself 11 and Mr Chung? 12 A. That is correct. What I can say is the bureaus and 13 departments that were involved in the project, some 14 people were attending from those organisations. 15 Q. All right. So somebody from the Buildings Department 16 and somebody from the Development Bureau? 17 A. Correct. 18 Q. Okay. That's fine. 19 Anyway, the upshot was that Prof Ma got a telephone 20 call, asking him to attend a meeting with the Chief 21 Executive on the morning of Monday, 6 August, and that 22 was a meeting that you also attended with Mr Chung? 23 A. Correct. 24 (In English) Excuse me, when you say Mr Chung -- by 25 the end of your saying, you say "Mr Chung"?</p>	<p style="text-align: right;">Page 15</p> <p>1 Q. Yes. Understood. That was on the 6th. 2 On 7 August, you attended an MTRC special board 3 meeting, in your capacity as an independent 4 non-executive -- sorry, as a non-executive director of 5 the MTR? 6 A. Correct. 7 Q. And, at that meeting, you were asked by Prof Ma to state 8 the government's view on the matter? 9 A. Correct. 10 Q. Which you did. 11 A. Correct. 12 MR PENNICOTT: Thank you very much, Mr Chan. I have no 13 further questions. 14 WITNESS: Thank you. 15 Cross-examination by MR SHIEH 16 MR SHIEH: Leighton has some questions. 17 MR BOULDING: MTR has no questions, sir. 18 MR TO: China Technology has no questions. 19 MR SHIEH: Right, so that leaves me. 20 MR CONNOR: I have no questions. 21 Cross-examination by MR SHIEH 22 MR SHIEH: Mr Chan, according to your witness statement, you 23 first became aware of emails, or email exchanges, 24 between China Technology and the government in early 25 June. Do you remember that? Do you remember saying</p>
<p style="text-align: right;">Page 14</p> <p>1 Q. I thought, maybe I was wrong, that the Secretary for 2 Transport was also there? 3 A. Allow me to provide more information here. On 4 6 August -- 5 Q. Sorry, he wasn't there. I beg your pardon. He was not 6 there. It was just you, Fred Ma, the Chief Executive, 7 and the Chief Executive's private secretary. 8 A. (In English) Director of the Chief Executive's Office. 9 Q. Yes, that's right. Sorry, that's my fault. Anyway, the 10 upshot of that meeting, as you've already indicated, was 11 Prof Ma was told that the government had lost confidence 12 in the SCL project senior management team? 13 A. Correct. 14 Q. And, as I understand it, from what Prof Ma told us, no 15 consideration was given by government to the roles that 16 each of the individuals concerned played; it was just 17 the whole team was going to go? 18 A. Allow me to make a simple supplement. The Chief 19 Executive is doing really senior management, and she 20 only related personally the views and comments of the 21 government. Of course, at our special meetings, and 22 also during my discussion with Mr Ma, we discussed the 23 rationale behind. That is why, on that day, with regard 24 to the reasons behind, it was not necessary to detail 25 that or repeat that to Mr Ma.</p>	<p style="text-align: right;">Page 16</p> <p>1 that in your witness statement? 2 A. I remember that. 3 Q. You also said in your witness statement that you were 4 subsequently shown the relevant email records? 5 A. Correct. 6 Q. That would be shortly after 5 June, after the press had 7 reported the matter? 8 A. That's correct, because I also had the responsibility to 9 seek an understanding into the matter and whether I was 10 amiss in my duties in any way, and whether the handling 11 of the matter was appropriate. So I had the 12 responsibility to review the matter. Even if this 13 happened in 2017, I thought that it was necessary to get 14 a full grasp of the entire incident and to see whether 15 it was handled properly, and whether I had any 16 responsibility to take. So I reviewed the matter. 17 Q. I was only asking you to confirm your witness statement. 18 So thank you for giving us the government LTT, line to 19 take, that is. 20 Can I ask you to look at the email exchanges, at 21 G3/2033. This would be one of the emails that you had 22 looked at after the media had reported the matter; 23 correct? 24 A. Could you please repeat the question? 25 Q. This is one of the emails that you had looked at --</p>

<p style="text-align: right;">Page 17</p> <p>1 A. Correct. 2 Q. -- after the media had reported the matter to the group; 3 correct? 4 A. Correct. 5 Q. It was an email which invited a joint interview in the 6 presence of the senior representative of the bureau, 7 MTRC, Leighton and China Technology; you saw that? 8 A. Correct. I saw it. 9 Q. You did not see this email at the time it was sent? 10 A. Yes, correct. Please allow me to elaborate. In our 11 mailboxes -- actually, we have two mailboxes -- 12 Q. For the public? 13 A. One is for anyone who may not have a direct connection 14 with us, and another one is personal. Some colleagues 15 in my office would be looking into the communication, 16 and depending on the request and the content of the 17 email the colleague would also do the distribution, and 18 if necessary the email would be given to me for perusal. 19 If that is about something that can be dealt with by 20 other colleagues, then the email would be directed to 21 that colleague. 22 Q. The media reports in late May/early June related to 23 incidents of cutting of threaded ends of rebar; you 24 remember that? 25 A. (In English) Yes.</p>	<p style="text-align: right;">Page 19</p> <p>1 related to the issue or problem that the media was 2 reporting at the time? 3 A. Well, a thought did cross my mind. I did not rule out 4 any possibility. As I've said, that thought did occur 5 to me. 6 Q. I'm reading from the transcript of a question put by 7 China Technology, who had chosen not to ask you the same 8 question, so I'm asking this question: 9 "This email is less than a page" -- and this is 10 Day 24, page 172. The subject matter of this question 11 was one of our witnesses, so I'm doing to you what China 12 Technology did to us: 13 "This email is less than a page. Would you not want 14 more particulars from Mr Poon regarding what are the 15 particulars of his complaint ...?" 16 A. If the complainant, so-called person making the 17 complaint, did have a complaint, I would say that our 18 colleague contacted him, inviting him to a meeting. 19 I believe it was 18 September. That person confirmed to 20 our colleague and also subsequently through email 21 confirmed that the matter had been satisfactorily 22 resolved. 23 So, if that's a complaint, and since our colleague 24 also contacted the MTRCL, our colleague would need to 25 consider that there was the request for an interview,</p>
<p style="text-align: right;">Page 18</p> <p>1 Q. When you saw this email on the screen, did it occur to 2 you that the interview which China Technology was 3 inviting and the question which, according to this 4 email, related to the interest of the public, had 5 anything to do with the matters reported in the media at 6 that time? 7 A. If we look at this email and the subject matter -- well, 8 in terms of the chronology, as you have rightly pointed 9 out, this is about the media report earlier this year, 10 but this report was -- this email was in about September 11 2017. Actually, our colleague contacted Mr Poon of 12 China Technology and the email was referred to the MTRCL 13 for action, and then later Mr Poon replied to our 14 colleague that the matter had been addressed, and my 15 colleague, that same colleague, also took some action to 16 follow up. 17 So, in terms of documentary records, we have handled 18 that. And as I have said, I thought that I would need 19 to take a look at this email, to see if there's 20 something I should have done. It's not the line to 21 take. At that point, when I read this, the media report 22 was already published, so it's natural that people would 23 try to look at the two things together. 24 Q. Did it occur to you, when your attention was drawn to 25 this email, that the subject matter of this email</p>	<p style="text-align: right;">Page 20</p> <p>1 and also after two to three days the matter was 2 addressed, and then the parties concerned did not have 3 further complaints, would one think that this is not 4 a satisfactory way of addressing the email or complaint? 5 Q. I'm not here to answer your question. I was asking 6 whether it occurred to you, whether you would want to 7 want more particulars from Mr Poon. I'm asking you 8 personally. Would you want -- 9 A. Your question is about the -- 10 MR KHAW: To be fair, I don't think Mr Chan was asking 11 Mr Shieh any question. 12 CHAIRMAN: Sorry, bear with me just a second. 13 MR SHIEH: I waited until the translation was completed and 14 I made sure that the transcript ended with a question 15 mark, "Satisfactory way of addressing the email or 16 complaint?" So maybe it was intended rhetorically. 17 CHAIRMAN: Mr Shieh, sorry, you can assist me here. The 18 secretary received knowledge of this particular email at 19 a later stage, and are you saying, at that later stage, 20 did he consider it necessary to look into the asserted 21 but not stated fact that there was a complaint? 22 MR SHIEH: That was my question, and what the complaint was. 23 CHAIRMAN: What the complaint was, yes. 24 At that stage, when you saw that, even though the 25 matter had been settled, did it occur to you, as</p>

<p style="text-align: right;">Page 21</p> <p>1 an individual, that perhaps you should look into this 2 matter again and see what the foundations of the actual 3 complaint were and its details? 4 A. When I got to see this email, that is when the media had 5 already reported on the incident, and I asked for the 6 email to be retrieved for me, and I confirmed that there 7 were all sorts of emails and I also knew that the 8 interview requested by Mr Poon had been addressed and 9 the matter referred to in the email had been addressed. 10 And the media, as a matter of fact, had already reported 11 the matter. 12 So, as I've said, when I knew that there were 13 problem with slabs and the platform, I didn't want to 14 miss anything. I would like to have everything 15 ascertained. But we all know what Mr Poon had told the 16 public. If you ask me whether I thought there would be 17 a need to review the email, then I would say the answer 18 is no at that point. The focus at that point was that 19 whatever had happened had been reported and the public 20 already knew. So we wanted to check the facts and also 21 to do this from the perspective of public safety and 22 public interest. We do not give too much weight to 23 disputes between private organisations, unless, 24 of course, if they impinge on public safety. 25 MR SHIEH: So you were aware, from what had been reported in</p>	<p style="text-align: right;">Page 23</p> <p>1 couplers, and whether the works were in any way 2 problematic. We thought that we had a full grasp of the 3 information, so we had a different consideration when it 4 comes to whether to see Mr Poon or not. 5 Q. You thought you had a full grasp of the information 6 based on what the media had chosen to report? 7 A. That's not what I meant. For the full grasp of 8 information that I was talking about, I felt that at 9 that point, whatever had happened, and our understanding 10 of where the problems lie and the extent of 11 understanding of those problems. 12 Q. I will ask the question again. The allegation of 13 Mr Poon was there was massive, organised cutting of 14 threaded rebars; you remember that? 15 A. Yes. 16 Q. That was an assertion by Mr Poon? 17 A. Also, I would invite you to read this statement from the 18 government team, and that the government had referred 19 the matter, the allegations, to law enforcement agencies 20 for action. So, if there was an allegation of massive 21 cutting of couplers or rebars, we thought that it would 22 be better for the law enforcement agencies to follow up 23 the matter, instead of carrying out a civilian 24 investigation, because when a criminal element was 25 involved, we had to do that; we had to refer to some</p>
<p style="text-align: right;">Page 22</p> <p>1 the media -- 2 A. Correct. 3 Q. -- and in the public arena, that Mr Poon has actually 4 made allegations in late May/early June? 5 A. Correct. 6 Q. You were also aware that there was a possibility, put it 7 no higher than it, that this was related to private 8 dispute between some parties? 9 A. That's a possibility. 10 Q. My question remains, irrespective of what your 11 subordinates might have done in 2017, did it occur to 12 you, as the most senior official responsible for this 13 matter in the Hong Kong government -- did it occur to 14 you personally to say, "We want to interview Mr Poon", 15 and know exactly what details he had to offer, bearing 16 in mind he did offer to meet the government way back in 17 September? 18 A. I think you are referring to September 2017, and now we 19 are talking about 2018. In 2018, with all the media 20 reports which spelt out the fact and we were conducting 21 an investigation, so was MTRCL. So, look, from this 22 angle, the information was very clear to us. Our 23 position was that whoever made some allegations or 24 offered their views, the government team would have to 25 have a look at issues involving the platform, the</p>	<p style="text-align: right;">Page 24</p> <p>1 LEA. 2 Q. So it did not occur to you as an individual, personally, 3 to think that the government, for the sake of safety, 4 public safety, should itself investigate the allegations 5 of widespread rebar cutting? 6 A. Please allow me to say again. With regard to the 7 allegation of massive cutting of threaded rebars, 8 basically we had referred all the information to the 9 police for investigation. In the process of the police 10 investigation, when necessary we would assist the 11 police. 12 So you talked about public safety and public 13 considerations. Those have been considered. 14 Q. But the focus was obviously different; do you accept 15 that? 16 A. I do not agree. 17 Q. You don't agree? 18 A. The focus is public safety and public interest. The 19 most important thing is that we should allow the unit 20 which would be most effective to do the investigation so 21 that it can get at the truth. 22 MR SHIEH: Thank you very much for assisting us, Mr Chan. 23 WITNESS: Thank you. 24 MR KHAW: No re-examination. 25 CHAIRMAN: Nothing arising?</p>

Page 25	1 COMMISSIONER HANSFORD: No, nothing from me. 2 CHAIRMAN: No. 3 Mr Chan, thank you very much indeed for your 4 attendance today. You have helped us a great deal. 5 Thank you. Your evidence is now complete. 6 WITNESS: Thank you. 7 (The witness was released) 8 MR KHAW: Our next witness is Mr Li Tze Wai, Ralph. 9 Good morning, Mr Li. Just to confirm your full 10 name, it's Li Tze Wai, Ralph; is that correct? 11 WITNESS: (Via interpreter) That's correct. 12 MR LI TZE WAI, RALPH (sworn in Punti) 13 (All answers given via simultaneous interpreter 14 except where otherwise specified) 15 Examination-in-chief by MR KHAW 16 MR KHAW: May I know whether you would like to give your 17 evidence in Cantonese or English? 18 A. Cantonese. 19 Q. For the purpose of this Commission of Inquiry, you have 20 made one witness statement. If we can just take you to 21 have a look at bundle G3, page 2088. 22 A. Yes. 23 Q. You can see that this is your witness statement and it 24 consists of about 11 pages. 25 If we can turn to page 2098, it's a statement dated	Page 27	1 MR PENNICOTT: Mr Li, good morning. 2 A. Good morning. 3 Q. As Mr Khaw has indicated, my name is Ian Pennicott, I'm 4 one of the counsel to the Commission, and I have a few 5 questions for you, and indeed there are very few. Thank 6 you very much for coming to give evidence to the 7 Commission this morning. 8 Could I first of all, Mr Li, ask you to be shown 9 an organisation chart at bundle G9, page 7022. As 10 I understand it, Mr Li, this is an organisation chart 11 for the Railway Development Office as at 13 August this 12 year. We see that from the bottom right-hand corner, if 13 it's not on the screen at the moment. 14 A. Yes, I see that. 15 Q. Then if we could go to the top of the document, please, 16 you will see that at the top of the tree, as it were, is 17 Jonathan Leung; do you see that? 18 A. Yes, I see that. 19 Q. He will be giving evidence fairly shortly. 20 Then if one goes to the left of the document, we 21 find "Railway Development Division 1-1", and then we see 22 your name? 23 A. Yes, that's my name. 24 Q. And you were -- you are, rather, currently, the Chief 25 Engineer/Railway Development?
Page 26	1 7 September 2018; do you see that? 2 A. I can see that. 3 Q. In fact, attached to this witness statement there is 4 a summary of key events in relation to the events which 5 took place between May 2018 and the end of August 2018, 6 at page 2107. Do you see that? 7 A. I can see that. 8 Q. Would you confirm that the signature that we can see at 9 page 2098 is your signature? 10 A. It's my signature. 11 Q. Can you also confirm that the contents of your witness 12 statement and also the contents of the summary of key 13 events are true to the best of your knowledge, 14 information and belief? 15 A. I confirm that. 16 Q. Would you confirm that you would adopt the contents of 17 your statement and also the summary of key events as 18 your evidence for the purpose of this Commission? 19 A. I can confirm that. 20 MR KHAW: So now Mr Pennicott, acting for the Commission, 21 may have some questions for you. Then lawyers acting 22 for other parties may also have some questions for you. 23 In the meantime, the Chairman and the Commissioner may 24 also ask you some questions. So please remain seated. 25 Examination by MR PENNICOTT	Page 28	1 A. That's correct. 2 Q. However, that wasn't always the case. Could I ask you, 3 please, to go to another organisation chart, at G1775. 4 It might be G3 but I'm not sure. 5 This might in fact be better viewed on the screen, 6 because they can blow it up, Mr Li, but we'll see how we 7 go. 8 This is the organisation chart of the Transport 9 Branch of the Transport and Housing Bureau, and as we 10 can see, Mr Chan, from whom we have just heard, is at 11 the top; do you see that? 12 A. Yes, I see that. 13 Q. If you come straight down, we see the Permanent 14 Secretary is Joseph Lai; do you see that? 15 A. Yes, I see that. 16 Q. I should have said this is at 1 July this year. 17 Then if you go left, right along to the end of the 18 line, you see "DS(T)1 Rebecca Pun"; do you see that? 19 A. Yes, I see that. 20 Q. Then if you go right, along two steps, you see "PAS(T)7, 21 and that's Mr Peter Mak currently; do you see that? 22 A. I see that. 23 Q. If one then goes down -- you don't need to move the 24 cursor, just keep it where it is, please -- you then see 25 "AS(T)7A (SE) KY Kam"; do you see that?

Page 29	1 A. Yes, I see that. 2 Q. My understanding is, Mr Li, if you can confirm this, 3 that where we see "KY Kam", that was your position 4 between 20 February 2013 and 20 February 2017; is that 5 correct? 6 A. That's correct. 7 Q. I was rather hoping Mr Khaw would have worked that out 8 for me, but never mind. I managed it myself. 9 Just to finish this point, if you go up to where 10 Peter Mak is, at PAS(T)7, my understanding is, Mr Li, 11 that when you were in the AS(T)7A post, for most of the 12 time it was Raymond Cheng who was in Peter Mak's 13 position? 14 A. Correct. 15 Q. Obviously, therefore, what I'm most interested in, so 16 far as you're concerned, is the period February 2013 to 17 February 2017, when you were in KY Kam's position. 18 Now, you tell us, in paragraph 2 of your witness 19 statement, that during that period your "main duties 20 then were to monitor the progress of the SCL project for 21 the section between Sung Wong Toi Station and Hung Hom 22 Station, and to handle the landholding arrangement of 23 SCL. Besides, I took care of matters of the KTE project 24 that required policy support or advice, and assisted in 25 the administration of the Railways Ordinance Unit."	Page 31	1 commissioned, then I would spend more time on that. 2 So it depends on the progress of the projects and 3 whether there are special circumstances, and the 4 percentage is different at different periods. That's 5 what I want to supplement. 6 Q. It would vary from time to time depending upon what 7 issues arose? 8 A. That is correct. 9 Q. Do you have any particular knowledge of contract 1112? 10 A. Yes, I do. 11 Q. In what respect; in relation to monitoring progress or 12 various aspects of detail? What is your knowledge of 13 contract 1112? 14 A. For contract 1112, for me, I need to know what's going 15 on and what we should do in monitoring the project. 16 Contract 1112 is a contract between MTRCL and Leighton. 17 Apart from construction, construction of the Hung Hom 18 Station Extension, there is also the future parking 19 facility and there are tunnels to link up with other 20 tunnels in other sections of SCL; I think that's the 21 scope of construction. 22 In monitoring, we were assisted by some consultants. 23 I also know that the contract involved some design work, 24 and we would be given some advice from other parties, 25 have a look at the progress, the public safety aspects
Page 30	1 So, Mr Li, did you spend most of your time on 2 fulfilling your duties in respect of the SCL project? 3 How was your time split up? 4 A. First, I would like to supplement one thing. I only 5 supervised one section of the SCL. I had to be mindful 6 of the progress of the stations, and when I occupied the 7 position 7A, for SCL there were two parts that I devoted 8 most time to. First, archaeological finds -- we had to 9 deal with a lot of issues -- and secondly, after 10 completion of SCL, the government considered that 11 perhaps SCL would be managed by MTRCL. So whether it 12 was the legal or financial side, I had to spend time on 13 that. Also, I talked about the Kwun Tong Extension 14 project as well. 15 That is my supplement. Thank you. 16 Q. But how much time did you actually devote in your 17 working week to the SCL project? 18 A. Looking at the situation then, it would depend in that 19 particular week whether there were special situations 20 warranting my attention. With regard to SCL or KTE, say 21 for example when there were archaeological finds at 22 Sung Wong Toi Station, it did take up a lot of my time. 23 As for the future, the handing-over of SCL to the 24 MTRCL or the KCR, then I would spend more than 25 50 per cent of my time on SCL. When KTE was about to be	Page 32	1 and the cost. 2 Q. Did you personally have any direct dealings with or 3 interaction with Pypun, the M&V consultants? 4 A. Yes. 5 Q. What was the nature of your professional dealings with 6 Pypun? Again, was it in relation to progress? 7 A. As I have said, they have both M&V, monitoring and 8 verification, and we had meetings with them, we did site 9 walks, and we talked to their people. We also 10 maintained communications through telephone and emails. 11 For 1112, they have a risk register. They would review 12 three aspects: programme, cost and safety. They have 13 a risk register for all these. When we wanted to do 14 some site walks, I would ask my colleagues about the 15 updated risk register and areas of concern. They also 16 submitted monthly reports to us. And in respect of 17 contract 1112, I would pay attention to certain areas of 18 concern and ask for a progress report. 19 Q. Right. In your witness statement at paragraph 21, you 20 refer to a site inspection, an on-site inspection, 21 carried out by the M&V consultant after the media 22 reports in May 2018. 23 Did you go on that site inspection, Mr Li? 24 A. Let me supplement a point first. From 28 May to 25 14 June, I was on a national studies programme in



<p style="text-align: right;">Page 33</p> <p>1 Beijing, so I was out of town. And on 15 June, it was 2 just after the completion of my programme, I took a day 3 off, I took leave, and another colleague was acting in 4 my position. 5 Q. So the answer so my question is no, because you were 6 away and out of town? 7 A. I was not in Hong Kong. 8 Q. In paragraph 34 of your witness statement you say: 9 "More recently, on 24 August [this year], MTR 10 reported at the meeting of the PSC about the discovery 11 of what appeared to be 'honeycomb' structures in the 12 concrete at the soffit of EWL slab. BD conducted site 13 inspection on 29 August 2018. MTR provided Highways on 14 29 August 2018 with copies of three non-conformance 15 reports ..." 16 Mr Li, did you attend the site inspection on 17 29 August? 18 A. Yes, I was there. I attended the inspection. 19 Q. Right. So you witnessed what was picked up and is shown 20 in the three non-conformance reports that you've 21 referred to in your statement? 22 A. Yes. 23 Q. Is it the case that those matters, to some extent, have 24 been dealt with and are continuing to be dealt with, 25 that is the remedying of the non-conformances that were</p>	<p style="text-align: right;">Page 35</p> <p>1 CHAIRMAN: I don't think ... 2 MR PENNICOTT: Sir, the document you really need to find is 3 at G2107.1. That's there. 4 CHAIRMAN: Yes. 5 MR PENNICOTT: That's the same as the previous schedule 6 summary, but this time, I hope, if it's anything like 7 mine, it's actually got the document references plugged 8 into it, as it were. 9 COMMISSIONER HANSFORD: That's correct. 10 MR PENNICOTT: Because I think the original schedule was 11 prepared before all the bundle references were known and 12 then government was asked to put in the references, 13 which they have done. 14 So it's started at G2107.1 and onwards that's really 15 necessary for present purposes. 16 I wasn't planning to go through that. It was just 17 really a reference point. It seems to me -- this is not 18 a criticism of Mr Li -- Mr Li is being used as a vehicle 19 for getting that correspondence in, getting it in 20 chronological order so one can see how the events 21 unfolded from day to day, and I wasn't planning to go 22 through it. It was really just to get the reference 23 point for you. 24 Sir, with that, I have no more questions. I don't 25 know whether anybody else does.</p>
<p style="text-align: right;">Page 34</p> <p>1 picked up? 2 A. They are being dealt with. 3 Q. Yes. Okay. 4 The schedule attached to your witness statement or 5 summary of events that's attached to your witness 6 statement that Mr Khaw mentioned a short while ago, as 7 I understand it, has been prepared by you based upon 8 various documents between, as Mr Khaw said, May and 9 August of this year? 10 A. Correct. 11 CHAIRMAN: Sorry, whereabouts is it again? 12 MR PENNICOTT: Sorry, the summary of events? 13 CHAIRMAN: Yes. 14 MR PENNICOTT: It's in G3, I think starting at 2099. 15 COMMISSIONER HANSFORD: We haven't got it here. 16 CHAIRMAN: No, we haven't got it here. 17 MR PENNICOTT: So you are in WS2, are you, in the witness 18 statement? 19 COMMISSIONER HANSFORD: How many sheets is it? 20 MR PENNICOTT: It's not that many. I need to find G3. 21 MR KHAW: Nine pages. 22 MR PENNICOTT: Yes, that's right. 23 Yes, it starts at 2099 and runs through to ... 24 CHAIRMAN: I have it, yes. 25 COMMISSIONER HANSFORD: You have it?</p>	<p style="text-align: right;">Page 36</p> <p>1 CHAIRMAN: Any questions from Leighton? 2 MR SHIEH: No. 3 CHAIRMAN: Mr Connor? 4 MR CONNOR: No, sir. 5 CHAIRMAN: From the MTR? 6 MR BOULDING: Yes, sir, I have one or two questions. 7 Cross-examination by MR BOULDING 8 Q. Good morning, Mr Li. 9 A. Good morning. 10 Q. You were asked by Mr Pennicott about Pypun; do you 11 remember being questioned about Pypun? 12 A. Yes. 13 Q. And you told Mr Pennicott that you were involved in site 14 walks on the SCL1112 contract; do you remember that? 15 A. Yes, I did. 16 Q. And you said that you had been involved in those site 17 walks; is that correct? 18 A. Yes. 19 Q. How many site walks can you remember that you made, 20 approximately? 21 A. Site walks were conducted once every three months. 22 Basically, I would be involved unless I have some other 23 urgent task to attend to. In that case, I would ask my 24 colleagues, maybe my senior engineer, to take my place. 25 So normally I would participate; the quarterly site</p>

<p style="text-align: right;">Page 37</p> <p>1 walks, I would be part of it. 2 Q. Just for the record, what was your senior engineer's 3 name? 4 A. There were a number of colleagues assisting me: Johnny 5 Chu; another, Vincent Chu, who assisted me in attending 6 the site walks. Not both of them; depending on the 7 time, one of them would go. 8 Q. And we've heard evidence that site walks would take, 9 what, about an hour and a half. Does that accord with 10 your recollection? 11 A. Maybe I should supplement a point first. First of all, 12 I would like to say something about the arrangement for 13 a site walk. The MTRCL colleague would give us 14 a briefing, by the use of PowerPoint first, pointing out 15 any special issues about the progress. We would be 16 given a briefing first and I would ask some questions, 17 and I would also ask Pypun questions. 18 Then we would spend more than half an hour on this 19 part, and then we would proceed to the site. If they 20 told us there was something we needed to pay attention 21 to in terms of progress, then we would call at more 22 locations. My recollection would be that it should be 23 more than one and a half hours, because the briefing 24 alone would take more than half an hour, and the walk 25 itself would last for more than an hour.</p>	<p style="text-align: right;">Page 39</p> <p>1 take part in any site walks. 2 Q. So your first site walk, personally, was in 2017? 3 A. I would say around about 2017, yes. 4 Q. Do you know who, from your department, would have been 5 involved in the site walks before 2017? Can you put 6 a name on that, please? 7 A. As I said in my witness statement, during my period, 8 originally there was a Chief Engineer Mr Chou who was 9 responsible for NSL. But whether he took part or not, 10 I wouldn't have the information here. 11 MR BOULDING: Okay. Thank you very much, Mr Li. No further 12 questions. 13 MR TO: No questions from China Technology. 14 CHAIRMAN: Peter? 15 COMMISSIONER HANSFORD: Yes, I have one question, Mr Li. 16 You referred to the risk register, when you were 17 telling us about your interaction with the M&amp;V 18 consultant. 19 Do you know how that risk register was compiled by 20 Pypun? 21 A. First, the MTR would require its contractor to supply 22 risk registers. Different contractors had to submit 23 different risk registers for different contracts. So 24 there were many, many risk registers. According to the 25 agreement, Pypun also had to come up with a risk</p>
<p style="text-align: right;">Page 38</p> <p>1 Q. Right. I'm right in thinking that if you or Pypun had 2 any concerns, you would raise those concerns with the 3 MTR; is that correct? 4 A. First, we would have to look at the PowerPoint of the 5 MTR on that particular day, to see whether they raised 6 any issues. Of course, before that, we would talk to 7 Pypun the route for the inspection and our areas of 8 concern. Also, it would depend on what the MTR reported 9 on that particular day. Then we would go to the site to 10 look at the areas of concern. 11 Q. Right. I'm right in thinking, am I not, that one of the 12 matters of concern would be whether or not the works 13 were on programme; is that correct? 14 A. Well, you can put it that way, but let me add, the 15 so-called works, I would take it to mean contract 1112, 16 because we were only talking about site walks on 17 contract 1112 and we should not be talking about the 18 entire SCL. 19 Q. I'm talking about contract 1112 as well. 20 You say you made the walks every three months. Can 21 you recall whether or not you would have visited the 22 1112 contract for a site walk in the period 23 approximately August 2015 to December 2015? 24 A. I took up the post in February 2017. I became the Chief 25 Engineer in February 2017, and before that I did not</p>	<p style="text-align: right;">Page 40</p> <p>1 register. 2 In order to facilitate it to compile these risk 3 registers, they would do some screening, and they would 4 include risks that were of more concern to them. Now, 5 in the agreement, we would ask them to read these 6 documents, and then the MTRCL would also have to do its 7 part. At the Hung Hom site office, two workstations 8 were assigned, so Pypun could go there according to 9 their own schedule to seek information, because many 10 contracts were involved, and then they would identify 11 a big number of risks. These risk items would be put 12 into a risk matrix. 13 According to the probability and severity, and so 14 a matrix would be formed for low, medium or high risks, 15 and then they would be in different colours. Say, if 16 you consider probability and severity, if it is both 17 high, then it would be regarded as a high risk. So they 18 select the risk and they would form a risk register. 19 The risk register should be updated every three 20 months. When updating has been done, there would be 21 a report to the RDO, and that is the views of Pypun. 22 Then RDO staff would endorse the risk register. Then it 23 would concentrate on programme, cost and safety, and we 24 would follow up by monitoring or making recommendations. 25 But the most important thing is monitoring, and we</p>

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<p>1 would pay particular attention to these risks, and Pypun 2 would be able to take follow-up actions. They would 3 have an exchange with MTR, and also, through programme 4 monitoring meetings, they would discuss programme with 5 MTRCL and also cost. 6 So there is a division of labour. 7 COMMISSIONER HANSFORD: Thank you. That's very helpful. 8 Just one further point: who actually analysed the 9 severity of the risk? Who decided which risks were 10 high, medium or low risks? Was that Pypun? 11 A. Yes, Pypun. As they said, they had different teams: 12 a programme team, a cost team and a safety team. They 13 had three teams and three team leaders. They would act 14 according to their professional opinion, and then they 15 would make the assessment and through the risk matrix 16 they would put a final ranking of high, medium and low 17 risk. 18 COMMISSIONER HANSFORD: Thank you. That's useful. 19 CHAIRMAN: Anything arising from that? 20 MR SHIEH: No. 21 CHAIRMAN: Good. Thank you very much. 22 MR KHAW: No re-examination. 23 CHAIRMAN: Thank you. Mr Li, thank you very much indeed. 24 You've been of considerable assistance and your evidence 25 is now completed, so you can go now. Thank you very</p>	<p>1 understand that you have given one witness statement. 2 If we can all turn to bundle G3, page 2075. That's your 3 witness statement, as we can see from the first page, 4 and it consists of several pages. It goes all the way 5 to -- I believe it has altogether 13 pages -- 2087; do 6 you see that? 7 A. Yes, I can see that. 8 Q. It's a statement dated 7 September 2018. Do you confirm 9 that you put your signature at the end of this witness 10 statement? 11 A. I confirm that. 12 Q. And you confirm that the contents of this witness 13 statement are true to your knowledge, information and 14 belief? 15 A. I can confirm that. 16 Q. Do you confirm that you adopt this witness statement as 17 your evidence for the purpose of this Inquiry? 18 A. I confirm that. 19 Q. Perhaps just to make Mr Pennicott happy, and also just 20 to show that I am aware of some sort of organisation 21 chart as well, if I can just refer you to G9/7022. 22 MR PENNICOTT: There are two. 23 MR KHAW: We understand that that is the organisation chart 24 in relation to the Railway Development Group as at 25 13 August this year. Your name appears at the top of</p>
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<p>1 much. 2 WITNESS: Thank you. 3 (The witness was released) 4 MR KHAW: Mr Chairman, our next witness will be Mr Leung 5 Man Ho. I wonder if that may be a convenient moment? 6 CHAIRMAN: Yes, thank you very much. 15 minutes. 7 (11.24 am) 8 (A short adjournment) 9 (11.47 am) 10 MR KHAW: Mr Chairman, our next witness is Mr Leung Man Ho 11 who is now sitting here. 12 Mr Leung, can you just confirm that your full name 13 is Leung Man Ho? 14 WITNESS: (Via interpreter) Correct. 15 MR KHAW: You are also known as Jonathan Leung; is that 16 correct? 17 WITNESS: (Via interpreter) Correct. 18 MR LEUNG MAN HO, JONATHAN (affirmed in Punti) 19 (All answers given via simultaneous interpreter 20 except where otherwise specified) 21 Examination-in-chief by MR KHAW 22 MR KHAW: Would you like to give your evidence in Cantonese 23 or English? 24 A. Cantonese. 25 Q. For the purpose of this Commission of Inquiry, we</p>	<p>1 this chart; can you see that? 2 A. I can see that. 3 Q. Can you tell me, when did you start to hold this 4 position in relation to the Railway Development Group? 5 A. It should be November 2015. 6 Q. Thank you. If we can go back to your witness statement, 7 2075, the first page, the first paragraph, where you 8 say: 9 "I was the Chief Engineer in Railway Development 10 Office of the Highways Department and held this position 11 from 2 July 2013 to 30 November 2015. During this 12 period, my duties included overseeing the construction 13 works under contract no. 1112 of the Shatin to Central 14 Link ('SCL') project. Since 1 December 2015, I have 15 been in the position of Government Engineer of the 16 Highways Department ..." 17 Do you see that? 18 A. I can see that. 19 Q. Can I just ask you, during the period between July 2013 20 and November 2015, in terms of percentage, how much time 21 did you spend on the SCL project? 22 A. During that period, I spent most of my time on SCL. 23 Q. So, in terms of percentage, would you say more than 24 50 per cent or -- 25 A. Definitely more than 50 per cent.</p>

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<p>1 MR KHAW: I have no further questions for you. Mr Pennicott  2 will have the right to ask you some questions first, and  3 then lawyers acting for other parties may ask you some  4 questions. The Chairman and Professor meanwhile may  5 have some questions for you. So please remain seated.  6 WITNESS: I understand.  7 Examination by MR PENNICOTT  8 MR PENNICOTT: Good morning, Mr Leung. As Mr Khaw said, my  9 name is Ian Pennicott, I'm one of the counsel to the  10 Commission, and I have a few questions for you. Thank  11 you very much for coming along to give evidence to the  12 Commission this morning.  13 I'm glad that Mr Khaw can take a hint, but there is  14 just one other organisation chart that I'd like to look  15 at. Could we please look at H7/2657. If you're looking  16 at the screen, Mr Leung, this is the organisation chart  17 of the BO team in the Railway Development Office of  18 Highways Department from 10 January 2012; do you see  19 that?  20 A. I can see that.  21 Q. My understanding is, if I've got this right, Mr Leung,  22 that from the second -- I'm reading from paragraph 1 of  23 your witness statement but you don't need to look at  24 it -- from 2 July 2013 to 30 November 2015, you were the  25 Chief Engineer, that's CE. So if we look on the</p>	<p>1 the hard copy or look at it on the screen -- that this  2 is a document that is I think prepared by Pypun, and  3 it's a site visit monitoring report; do you see that?  4 A. Yes.  5 Q. As I understand it, this document -- and we'll see a few  6 of them in a minute -- forms part of the monthly report  7 that Pypun would submit to government?  8 A. Correct.  9 Q. If we go back, just so that we've got that point, to  10 G10/8035, that's the front sheet of the content of the  11 report, the monthly report. We can see this is  12 number 29.  13 Then if you go over the page to 8036, there's  14 a series of appendices listed, and D is the "Site visit  15 schedule and site visit monitoring report"; do you see  16 that?  17 A. Yes. These are the appendices.  18 Q. Indeed.  19 If we can go back then, please, to 8053, which is  20 the site visit monitoring report, we can see that you  21 were there, together with two colleagues, five  22 representatives from Pypun and three from MTR; do you  23 see that?  24 A. Correct.  25 Q. It says in the introduction:</p>
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<p>1 left-hand side of this chart, under the Highways  2 Department, we have "Government Engineer" and then  3 underneath "Chief Engineer", and that was your position,  4 as I say, from July 2013 to the end of November 2015; is  5 that right?  6 A. Chief Engineer, yes, that's correct.  7 Q. Right. Mr Leung, as I understand it, as I think you say  8 in paragraph 12 of your witness statement:  9 "In addition to the three-tier monitoring  10 mechanism", which you have dealt with in your statement,  11 "Highways has also appointed a monitoring and  12 verification consultant, [that is] Pypun, to assist  13 Highways in monitoring the works of MTR."  14 As I understand it, when you were the Chief Engineer  15 in the period that we've just identified, you liaised  16 with Pypun, and you did accompany them on their  17 quarterly site visits on a regular basis?  18 A. Correct.  19 Q. What I'd like to do is just identify some of the  20 documents that evidence those site visits, Mr Leung.  21 What we need for that purpose is file G10. We will pick  22 it up at the beginning or towards the beginning of 2015,  23 that's March 2015. Could you please look at G10/8053.  24 One can see from this document -- you're being given  25 a hard copy; it's up to you, Mr Leung, whether you use</p>	<p>1 "Joe Tsang of MTR gave a briefing on contract 1112's  2 latest progress of work."  3 I think as Mr Li just described, is this right,  4 Mr Leung, before you went out on your site visit, MTR  5 would give a briefing so that everybody knew where they  6 were and perhaps what was of interest to look at? Is  7 that right?  8 A. Correct. It's a fact. Every time when we went to the  9 site or before we went to the site, or at the point when  10 we selected a site for visit, we will look at the  11 matters or issues of importance, areas of concern, and  12 then we would concentrate on those areas, because there  13 are more than 100 contracts for SCL, and half of them  14 were worth more than \$50 million, so we needed to focus.  15 We needed to inform ourselves of the matters of concern.  16 Then every time before we went, they would tell us that  17 we should pay attention to certain areas.  18 Q. When you say "they tell us", that is MTR would tell you?  19 A. Correct.  20 Q. So you would then go out on your site visit. How long  21 would the visit, that's actually on the site -- how  22 long, on average, would the visit take?  23 A. It would depend on the site issues, major or minor  24 issues. But we didn't have much time. We would  25 certainly like to go to one or two sites or stay -- we</p>

<p style="text-align: right;">Page 49</p> <p>1 would like to stay for a longer time on some locations. 2 So it would be for one or two hours, but not all the 3 time would be spent on one single location. 4 Q. Understood. 5 A. Thank you. 6 Q. We can see from this report that you went to the freight 7 yard, you were told some information about the pre-bored 8 H-piles, you went to the stabling sidings, you went to 9 the Cheong Wan Road Viaduct, the North Approach Tunnel, 10 the South Approach Tunnel, Hung Hom Station. 11 Mr Leung, given what's recorded in this report, the 12 different areas, is it a correct assumption that you 13 would have visited these areas? 14 A. The site for contract 1112 was big, and here you were 15 talking about all the relevant elements under that 16 contract. Every time when we conducted a visit, we 17 might not be able to reach all those locations. It was 18 a big site. We have more than an hour. It would not be 19 possible to concentrate on each and every detail. So 20 every time we would focus on one particular area of 21 concern and we would look at that in greater detail. 22 Q. Yes, I thought that was the position, because from your 23 description of one to two hours -- let's take the 24 maximum, two hours -- it would be pretty difficult to go 25 around and see, unless you were running, all of these</p>	<p style="text-align: right;">Page 51</p> <p>1 June." 2 Then one sees a photograph to the right of that; do 3 you see that, Mr Leung? 4 A. Yes, I can see that. 5 Q. And presumably somebody from Pypun would be taking 6 photographs as you were going around, for the purposes 7 of putting them in these reports; is that right? 8 A. Correct. 9 Q. Right. 10 A. Let me add: for D-wall panels, it's on the critical 11 path. They were slow at first in the construction of 12 D-walls, so that was one of our concerns. 13 Q. Right. Then if we could go on to the next report, 14 that's at 8119. We've now reached 24 September 2015, 15 and again, Mr Leung, you were present on this site 16 visit, again with representatives of Pypun and the MTR? 17 A. Correct. 18 Q. If you could be shown, please, page 8121, towards the 19 bottom half of the page there's a reference to "Area C". 20 The third item: 21 "Construction of the EWL slab was in progress 22 (gridlines 26 to 31 and 36.5 to 38.5 were complete." 23 And we know that's as C1-3, C2-1 and C2-5. 24 On these visits, Mr Leung, was there sort of free 25 discussion; you were able to ask the MTR questions,</p>
<p style="text-align: right;">Page 50</p> <p>1 areas on one visit. It just wasn't possible, was it? 2 A. You can put it like that. 3 Q. Right. Then if we could move on. If we go, please, to 4 page 8077, we see some matters in this report, which is 5 the 5 June report, so three months later. Again, you 6 are present with representatives of the RDO -- 7 A. Yes. 8 Q. -- Pypun and MTR. 9 A. Yes. Correct. 10 Q. We see some matters that are a bit more familiar to us 11 on this one. So, at number 2.0, "Work in progress" at 12 8078, it says: 13 "Overall, 277 out of 282 D-wall panels have been 14 cast." 15 Then "Area A": 16 -- D-wall panels in area A had been completed in 17 April 2015. 18 -- Concreting of the EWL slab in area was about 19 50 per cent complete." 20 Then there's similar references in relation to 21 area B and the Coliseum. 22 Then over the page at 8079, at the top of the page, 23 "Area C": 24 "The remaining 5 D-wall panels (out of 146) in 25 area C with scheduled for completion by the end of</p>	<p style="text-align: right;">Page 52</p> <p>1 Pypun were able to ask the MTR questions? Was there the 2 ability to do that? 3 A. During a site visit or site walk, we would be with MTRCL 4 people and we would ask questions along the way. Very 5 often, we would focus on issues raised at other 6 meetings. In this case, at that time, the major issue 7 would be underpinning and also the CLP tunnel; both were 8 critical elements at that time. We would ask questions 9 about those. Previously, we would also ask about 10 D-walls, because initial progress was slow, but they 11 managed to pick up afterwards. 12 Q. Mr Leung, as far as I can tell, the next site visit was 13 held on 7 December 2015, so three months on, by which 14 time you had taken up your new position and therefore 15 you didn't attend, I think, any further site visits. 16 I think this was your last one. Can you confirm that? 17 A. Correct. 18 Q. Can I ask you, please, to look at a couple of 19 photographs. Could I ask you, please, to be shown 20 B17/24248. 21 This is a photograph of 22 September, Mr Leung, 22 taken two days before your site visit. If we could just 23 look at the next photograph and then I will ask you 24 a question. There's another one, the same date -- 25 sorry, and one more photograph, please, 250 -- do you</p>

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1 see that?

2 If we can go back one photograph. My understanding

3 is that -- first of all, do you have any recollection of

4 seeing what we can see in this photograph at the time,

5 not necessarily exactly the same but similar items of

6 work?

7 A. I cannot recall that. When we did the inspection, we

8 wouldn't be so clear. We have to look at the stage of

9 concreting for the whole area, whether the timetable

10 could be met, and the problems/issues related to that

11 progress. We wouldn't be looking at the length of

12 rebars or the location of couplers. Those we would not

13 be concerned about.

14 Q. You see, my understanding is, Mr Leung, that this

15 photograph may show the trimming down of the top of

16 a diaphragm wall. Is that something that means anything

17 to you?

18 A. Well, I can say something about this. Contract 1112 was

19 different from other contracts. It was a project on

20 an existing podium and they had to take down a lot of

21 things. For example, the existing platforms, existing

22 structures would have to be demolished and some of the

23 columns would have to be taken out. So it's not

24 surprising to see that they were taking down something,

25 but I wouldn't know what they were working at.

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1 Q. It's not the sort of thing you would raise a query about

2 with MTRC, if you saw something similar to this?

3 A. No. No.

4 COMMISSIONER HANSFORD: Sorry, can I just take it one step

5 further: in the briefings that you would receive prior

6 to the site walk, was the breaking down at the top of

7 the concrete wall mentioned?

8 A. Never. It was never mentioned.

9 COMMISSIONER HANSFORD: Thank you.

10 MR PENNICOTT: Can I ask you, please, to look at another

11 photograph. B19/25595.

12 We can see on this photograph, I believe, at least

13 one assumes the caption is right in the top right-hand

14 corner, this was taken on 26 September 2015, so two days

15 after your site visit. This is said to show that

16 through-bars were adopted in this particular area, that

17 is bay C1-4.

18 Again, is this something that you would have seen

19 and remembered at the time, Mr Leung?

20 A. I can't recall seeing this, but, as I said, if there

21 were particular situations, the MTRCL should have

22 alerted us to it, meaning that there had been changes.

23 If there were not any changes, if these were not

24 labelled here, we might look at the photograph and we

25 might not know what is happening.

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1 Q. Okay. Could I then ask you to look at another

2 photograph. Let's try E5/1279.

3 This is a photograph taken on 10 September 2015.

4 These, I should say, for anybody who is interested, come

5 from the Fang Sheung photographs in bundle E5. We can

6 see that the caption is "Scrap metal after replacing

7 damaged couplers".

8 Do you ever remember seeing situations like this on

9 your site visit in September 2015, Mr Leung?

10 A. I should not have seen this because, if I had seen

11 something like this in front of me, I would have asked

12 MTRC what this was. Therefore, my recollection is

13 I shouldn't have seen something like this.

14 Q. All right. Let's try the next photograph, 1280.

15 Similar.

16 A. I would have had the same reaction. If I had seen

17 something like this, I would have asked MTRC what that

18 was and why they were here. Based on my knowledge now,

19 I would definitely have asked questions, if I had seen

20 them.

21 Q. All right. 1282.

22 Sorry, can we just go back to that last photograph.

23 I should have said -- I appreciate this is on

24 16 December, so this is taken after you had changed

25 position, but anyway. We can see what the photograph

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1 shows.

2 A. (In English) Yes, this is after.

3 COMMISSIONER HANSFORD: Can I just go back to Mr Leung's

4 answer to the last question, because what the transcript

5 says is, if you had seen something like this, you would

6 have asked questions. Based on your knowledge now, you

7 would definitely have asked questions. But what about

8 based on your knowledge at the time, would you have

9 asked questions?

10 A. Yes. If I had seen something so strange, in a normal

11 site, I would have had questions asked.

12 COMMISSIONER HANSFORD: Okay. Thank you.

13 MR PENNICOTT: 1282 and 1283. Now, again, this is -- again,

14 I think we are in April 2016, so I accept, Mr Leung,

15 after you had ceased to be the Chief Engineer -- but

16 again, did you see these skips full of all these

17 scrapped couplers back in 2015?

18 A. I did not see them.

19 Q. All right.

20 Now a completely different topic, Mr Leung. In

21 paragraphs 31 to 35 of your witness statement, you deal

22 with -- you have a heading and you deal with "incidents

23 of non-conformities" or "other non-conformities". It's

24 at G3/2083.

25 A. Yes.

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<p>1 Q. You say in paragraph 32: 2 "On 14 May 2015, I received an email from the 3 representative of BO team, which informed me that 4 several site irregularity activities were reported to 5 the BO team. By way of a follow-up email on 18 May 6 2015, the BO team sent me a summary of the 7 non-conformity items. Three of the items were 8 subsequently escalated to the PSC for discussion ..." 9 And that's the project supervisory committee, 10 supervision committee? 11 A. That's correct. 12 Q. "... namely: (i) the construction of capping beam/portal 13 frame which commenced before the completion of works for 14 the diaphragm wall ...; (ii)" -- which is the one I am 15 interested in -- "the construction of diaphragm wall 16 which deviated from the accepted design" -- which you 17 have called the unauthorised deviation -- "and (iii) the 18 unauthorised cutting of existing steel beam supporting 19 the concourse ..." 20 Then over the page, at paragraph 33, you say: 21 "MTR was requested to address the non-conformity 22 items at a meeting on 27 May 2015." 23 As I say, I'm only interested for present purposes 24 in number (2), Mr Leung, as to which you say: 25 "As to the unauthorised deviation, MTR agreed that</p>	<p>1 diaphragm wall will be submitted to BD for approval in 2 accordance with the agreed timetable between MTR and 3 Leighton". 4 Do you see that? 5 A. I can see that. 6 Q. Just so I've understood the position, Mr Leung, are you 7 saying that the government was prepared to accept the 8 position as set out on this slide with regard to changes 9 to the working drawings? 10 A. The MTR proposed the follow-up action like this on that 11 day. It had already been done. That is why the MTR 12 proposed this for the sake of follow-up. In fact, they 13 had to make an assessment/an analysis and submit that to 14 BD, and they had to state what they would propose to do, 15 and all that should have been checked by MTR before 16 works could proceed, and there should be a reasonable 17 timetable for submission to BD. 18 But if you want more details, you can refer to my 19 colleagues in the Buildings Department. 20 Q. All right. But, as I understand it, this obviously -- 21 the unauthorised deviation had been picked up, and we 22 know that steps were taken to address that, in terms of 23 the preparation of reports and so forth that were 24 subsequently submitted to government. But is this slide 25 expressing the position going forward, as it were, what</p>
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<p>1 all proposed changes to the working drawings for the 2 diaphragm wall had to be approved by MTR before relevant 3 works could be allowed to proceed on site; and they 4 would be submitted to BD for approval with [or within] 5 an agreed timetable." 6 Then you say this: 7 "A copy of the PowerPoint slides prepared by MTR for 8 the aforesaid meeting is at annex LMH-10." 9 Could we just very quickly look at those slides, 10 please, which as you have indicated are G11/8596. Do 11 you have that? 12 A. (In English) Yes. 13 Q. If you go, please, to page 8600. 14 This is a diagrammatic presentation, Mr Leung, of 15 what we know as the first change, that is the missing 16 U-bar change. Do you understand? 17 A. Yes, I can see that. 18 Q. Right. In relation to that, if you go over to the next 19 page, 8601, the MTRC slide in relation to the 20 unauthorised deviation from working drawings says this: 21 "All proposed changes to working drawings for 22 diaphragm wall must be approved by MTR construction 23 management/design management team before relevant works 24 can be allowed to proceed on site; 25 (2) All proposed changes to working drawings for</p>	<p>1 you expected in the future to happen? 2 A. In fact, this stated what the MTR proposed to do. So 3 you are correct. As they said in point (1), all 4 proposed changes must be checked and approved by MTR, 5 and there should be a reasonable timetable for taking it 6 up with the BD. 7 Q. Right. You expected the MTR and Leighton to come up 8 with that timetable? 9 A. Yes. 10 MR PENNICOTT: Thank you very much, Mr Leung. I have no 11 further questions for you. 12 CHAIRMAN: Thank you. 13 MR SO: No questions from China Technology. 14 MR SHIEH: No questions from Leighton. 15 MR CONNOR: No questions from Atkins. Thank you. 16 MR BOULDING: None from MTR, sir. 17 CHAIRMAN: Good. Thank you. 18 MR KHAW: Just one follow-up question from one of 19 Prof Hansford's questions raised earlier. 20 CHAIRMAN: Yes. 21 Re-examination by MR KHAW 22 MR KHAW: Mr Leung, you will remember that Mr Pennicott took 23 you to look at some photographs. 24 A. Yes. 25 Q. And Mr Hansford asked whether, at the briefing sessions</p>

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<p>1 which were held before the site walks, did anyone from 2 MTR tell you or your colleagues about the breaking down 3 of the top of the diaphragm wall. Do you remember that? 4 A. They never said anything like that. 5 Q. May I just confirm whether anyone actually told you, on 6 government, or your department, that the top of the 7 diaphragm wall would be knocked down during the site 8 walks? 9 A. It was not until July this year. 10 Q. Did anyone also mention anything about -- I mean during 11 the site walks -- the intended use of through-bars 12 instead of couplers for the construction regarding the 13 connection between the diaphragm walls and the platform 14 slabs? 15 A. Never. 16 MR KHAW: I have no further questions. 17 CHAIRMAN: Thank you. 18 COMMISSIONER HANSFORD: I have one question. 19 Mr Leung, Mr Pennicott took you to paragraphs 32 and 20 33 of your witness statement, G2083 and G2084. On 21 G2083, paragraph 32, you helpfully set out the three 22 items. Mr Pennicott asked you about item (ii), the 23 unauthorised deviation; yes? Do you remember? 24 A. Yes. 25 COMMISSIONER HANSFORD: I would just like to ask you</p>	<p>1 Mr McCrae on the videolink from London. 2 CHAIRMAN: Yes. 3 MR PENNICOTT: So I think we are going to be sitting 4 probably until -- my estimate of my time with Mr McCrae 5 is probably about an hour to an hour and a half, so we 6 are certainly going to be going through until 5.30 at 7 the earliest. Of course I don't know whether anybody 8 else will have any questions for him. So we are 9 definitely going to finish late this evening, on any 10 view. 11 CHAIRMAN: Of course, yes. 12 MR PENNICOTT: So perhaps an extended lunch hour today is 13 not such a bad thing, certainly from my perspective. 14 CHAIRMAN: No. Good. Then, as far as Mr Lim is concerned 15 from BOSA, is he 2.00 or 2.15? 16 MR PENNICOTT: We have asked him to get here for 2.00, but 17 with a view to starting at 2.15. I confess that the 18 legal team -- I have not met him at all. 19 CHAIRMAN: I see. All right. 20 MR PENNICOTT: I'm certainly not proposing to either, but 21 obviously we will let you know when he's here, but 22 I think 2.15 anyway, I think we should start, if that's 23 convenient. 24 CHAIRMAN: Good. We will adjourn until 2.15. 25 MR SO: Sir, I do apologise. There is a short application</p>
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<p>1 something quickly about item (i), the capping 2 beam/portal frame incident, and then in paragraph 33(1), 3 over the page, you say -- and you are talking here about 4 tracking submissions to BD and you say "Leighton would 5 appoint a senior engineer with BD experience to keep 6 track [of] all BD submission[s]". 7 Do you know if they did that and do you know who it 8 was? 9 A. I did not follow up that after this incident. The BO 10 team would do that. We had a BO team. The BO team was 11 responsible for BD submissions. They had meetings 12 between these parties. 13 COMMISSIONER HANSFORD: That's fine. I'll ask it from the 14 BD witnesses a bit later. 15 Thank you very much. 16 CHAIRMAN: Anything arising from that? No. 17 Thank you very much. Your evidence is completed 18 now. Thank you. So you can leave now. 19 (The witness was released) 20 MR PENNICOTT: Sir, I would like to say I planned it but 21 that is actually quite a convenient moment, even though 22 it's only 12.30, because as you know, we have Mr Lim 23 from BOSA coming in at 2 o'clock/2.15 this afternoon. 24 CHAIRMAN: Yes. 25 MR PENNICOTT: And then of course we have at 4 o'clock</p>	<p>1 on the part of China Technology. 2 MR PENNICOTT: Sir, I'm not allowing this application to 3 take place at this stage. We are in the middle of 4 witnesses, the government witnesses and then interposing 5 two witnesses this afternoon. I'm not in a position to 6 deal with this application, although I have been given 7 short notice of it. So could I respectfully request 8 that this application be deferred? 9 There's another additional reason, in my submission, 10 it should be deferred. First of all, I think I'm the 11 only one who knows about it apart from Mr Khaw for the 12 government. Sir, my brief consideration raises this 13 concern, that I may wish -- and I've discussed this 14 briefly with Mr Khaw earlier today -- to invite you to 15 take the rather unusual step of taking the application 16 in camera, given its nature. I won't say any more about 17 that. I can't say I've formed a conclusive view about 18 that, but I may wish to make an application to you that 19 the application should be heard in camera. 20 CHAIRMAN: All right. 21 MR PENNICOTT: Certainly I'm not in a position to deal with 22 it now. 23 MR SO: In response to my learned friend Mr Pennicott's 24 indication for hearing in camera, we have a neutral 25 stance to that, and I'm happy to defer my application</p>



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<p>1 until the time sir and Mr Chairman see fit. 2 CHAIRMAN: Yes, thank you. I think there's no room for 3 an application today. We have seen the written 4 application. We've had no opportunity really to do more 5 than just fast-read through it. 6 MR SO: I understand. 7 CHAIRMAN: And we are in no way in a position to digest what 8 is intended. So I think it may be better if there is 9 a liaison between yourself and Mr Pennicott as to what 10 may be an appropriate day for the application. 11 MR PENNICOTT: Sir, so far as I can see, just to allay the 12 fears of other parties here, it does appear to be 13 an application that only affects the government and the 14 Commission, and obviously China Technology, but no other 15 party, as far as I can see, would have any involvement 16 in the application. 17 MR SO: That's the same position of China Technology. 18 MR PENNICOTT: But again it's a question of having to think 19 that one through. 20 CHAIRMAN: Yes, I'd like to think that through. 21 MR PENNICOTT: Indeed. That was my initial reaction but one 22 can see whether the other parties want to listen is 23 a matter for them. 24 MR BOULDING: Sir, can I just make an observation. I am 25 heartened to hear from two of my learned friends that</p>	<p>1 application to be heard on the issue, I don't know, 2 because -- maybe not the parties sitting in the main 3 well, but those sitting to the side. 4 MR PENNICOTT: Yes. As I say, those who may be interested 5 may want to reflect upon whether or not the application 6 should be also heard in camera. 7 CHAIRMAN: Yes. Thank you. 8 2.15. 9 (12.38 pm) 10 (The luncheon adjournment) 11 (2.17 pm) 12 MR PENNICOTT: Good afternoon, sir. The Commission proposes 13 now to call a witness. This is Mr Paulino Lim. 14 MR PAULINO LIM (affirmed) 15 Examination by MR PENNICOTT 16 Q. First of all, can you state your full name, please? 17 A. My full name is Paulino Lim. 18 Q. Right. Can I ask you this, Mr Lim: are you sometimes 19 known as "Paul Lam"? 20 A. Yes, sir. 21 Q. We'll see why I needed to ask that in a moment. 22 Mr Lim, as I will call you, if you could be shown, 23 please, bundle H25/44825. 24 A. Yes. 25 Q. My understanding, Mr Lim, is that this is a witness</p>
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<p>1 it's not going to affect me, MTR. I personally would 2 like to take a view of my own on that, and I wonder 3 whether you would consider -- no need to decide now -- 4 making an order that we be copied in with presumably 5 some sort of skeleton argument that I assume 6 Mr Pennicott has seen and it may well be you've seen it 7 as well. 8 MR PENNICOTT: Yes. The position is I've seen it, I imagine 9 Mr Khaw has seen it, and I know, sir, you've seen it 10 together with Prof Hansford. 11 I have no difficulty in the other parties being 12 distributed the document concerned so that they can see 13 what the application is. 14 CHAIRMAN: I think that's important. 15 MR PENNICOTT: I know they haven't yet but I just wanted to 16 see how things -- 17 CHAIRMAN: No, in due course, if only on the basis that -- 18 I think the metaphysical poet, something about "No man 19 is an island", entirely -- 20 MR PENNICOTT: John Donne. 21 CHAIRMAN: John Donne, is it? Thank you. Well done. We 22 both obviously did A Level English! 23 MR PENNICOTT: Something like that. 24 CHAIRMAN: I definitely agree that the other parties must be 25 entitled to know, and they may indeed wish to make some</p>	<p>1 statement that you gave to the Buildings Department at 2 an interview which took place on 27 November 2018. Is 3 that correct? 4 A. Yes, that's correct. 5 Q. We can see that you have signed the statement, I think 6 just about on every single page, not just at the end, 7 and indeed there are a series of appendices to the 8 statement which you have also either initialled or 9 signed? 10 A. Yes, that's correct. 11 Q. Mr Lim, are you content to adopt the contents of this 12 witness statement as your evidence to the Commission? 13 A. Yes, sir. 14 Q. Mr Lim, are the contents of the witness statement true 15 to the best of your knowledge and belief? 16 A. Yes, sir. 17 Q. Now, Mr Lim, can I just really as a matter of formality 18 and ask you to be shown bundle C6/4842, where we should 19 find the front sheet to a sub-contract between Leighton 20 and BOSA Technology (Hong Kong) Ltd; do you see that? 21 A. Yes, sir. 22 Q. Now, in your own words, Mr Lim, can you tell us what 23 your job duties and responsibilities are for BOSA? 24 A. Initially, setting up of the fabrication yard at the job 25 site. We also have our fabrication yard in Tin Shui</p>

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<p>1 Wai, which acted as a backup initially whilst we were 2 setting up the fabrication on site. 3 My responsibility ranged from obviously the seller's 4 manager for BOSA Technology and I was involved in the 5 sales of this contract and the operations management of 6 the Hung Hom fabrication yard on site. 7 Q. Right. I also understand that you had a role in certain 8 training sessions? 9 A. Yes, that's correct, sir. 10 Q. Right. We will come to those in a moment. 11 Are you familiar with the sub-contract between -- 12 I don't need the nitty-gritty details, but generally 13 speaking, are you generally familiar with the 14 sub-contract between BOSA and Leighton? 15 A. Mainly the quantity, the bill of quantity, in terms of 16 how many couplers that we were to supply for this 17 project. The nitty-gritty details, I obviously cannot 18 remember, I'm sorry. 19 Q. Okay. If you go to page or will be shown page C6/4915. 20 We can see here, this is appendix 2 to the sub-contract, 21 headed, "Pricing schedule -- bills of 22 quantities/schedule of rates"; do you see that? 23 A. Yes, I can see that. 24 Q. This is the document that you're most familiar with 25 within the sub-contract; is that right?</p>	<p>1 A. Yes. 2 Q. Were those items in fact delivered to -- 3 A. Yes, they were delivered. 4 Q. Right. 5 A. May I add? 6 Q. Yes, of course. 7 A. In this particular job site, we have five production 8 lines and two automated cutting machines, and each of 9 the production lines consists of three machines. The 10 first, which you can see is the cutting machine, 11 automatic cutting machine, and then we've got the 12 crimping machine, followed by the third, which is the 13 threading machine. And we have five of these production 14 lines which we use for manufacturing of the threads or 15 threading. 16 Q. Okay. I think you've explained this point already but 17 in your witness statement, at question and answer 4, the 18 question was: 19 "When did you start working for the site? Are you 20 employed as a full-time site staff?" 21 You say: 22 "Full-time, when the coupler yard was commenced in 23 October 2013." 24 As I understand it, that is when, as it were, BOSA's 25 fabrication or coupler yard was established, in October</p>
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<p>1 A. Yes. 2 Q. My understanding, Mr Lim, you can see from a previous 3 page, is that -- if you be shown, please, page 4881, 4 that's the third schedule to the sub-contract. We see 5 the sub-contract price there and we see that this is 6 a re-measurable sub-contract price "based on assumed 7 quantities and will be valued out at the rates as 8 stipulated in appendix 2", which is the appendix we have 9 just looked at. 10 "The sub-contract price includes [a sum] for 11 mobilisation costs." 12 As I understand, Mr Lim, this is a re-measurable 13 contract, so at the end of the day, BOSA will be paid 14 for the quantities of materials and so forth that they 15 supplied? 16 A. That's correct. 17 Q. Okay. On that same page, towards the bottom -- and 18 we'll come back to this point in a moment -- we see, 19 under the heading "Period for completion", there's 20 a heading, "Delivery of equipment"; do you see that, 21 Mr Lim? 22 A. Yes. 23 Q. You were to supply -- or deliver, rather -- an automated 24 crimping machine and two automated threading machines 25 and a cutting bench top machine?</p>	<p>1 2013; is that right? 2 A. Yes. I believe it would have been around about there 3 that we commissioned the actual fabrication yard at the 4 inside of the Hung Hom Station, yes. 5 Q. Right. We know that the first diaphragm wall, EM99, was 6 constructed, and therefore the rebar cages had to be 7 constructed, by 1 August 2013. So how did BOSA operate 8 in those first few months before your fabrication yard 9 was set up in October? 10 A. I can only vaguely remember the date. I'm sorry about 11 that; it's been a little while. 12 We had our own factory fabrication yard located in 13 Tin Shui Wai. So prior to the completion and 14 commissioning of the site at Hung Hom Station, all the 15 threading was carried out in our fabrication yard in 16 Tin Shui Wai. I'm not sure about the August date, but 17 I assume it will be correct if you have checked it 18 because I haven't. 19 Q. Right. So, for the first few months, on that 20 assumption, you were operating out of your Tin Shui Wai 21 facility, threading the rebar there, and presumably 22 delivering the couplers from there to the site as they 23 were required? 24 A. Yes, that's correct. Once we have completed fabrication 25 and based on the purchase order issued from Leighton,</p>

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<p>1 then we will arrange truck to send the bars back to the 2 job site for use. 3 Q. All right. I mentioned just a moment ago, and you 4 agreed, that you were responsible for training BOSA 5 staff, MTR engineers and contractor's staff. And in 6 answer 19 in your witness statement, that is at 7 page 44830, you say: 8 "Training to rebar fixers in Cantonese with respect 9 to coupler installation and to site engineers/inspectors 10 of Leighton and MTR with respect to coupler inspection. 11 Leighton and MTR staff should inspect threaded rebar 12 production and filled the form Quality Control &amp; 13 Inspection Record on Thread Preparation After 14 Inspection. The form Independent Checklist for On-site 15 Assembly of BOSA Seisplisce Couplers in any Location 16 should also be filled. These two forms should be 17 included in the logbook kept on site. BOSA may have 18 some attendance lists of the training and if I find 19 them, I will send to BD." 20 Do you see that? 21 A. Yes, sir. 22 Q. As I understand it, Mr Lim, you did find some training 23 attendance lists and you did send them to BD? 24 A. Yes. I was followed up for the records. 25 Q. Yes. If we can go to H26, please, at 45187. There</p>	<p>1 towards the beginning of the time in which the diaphragm 2 wall cages were being fabricated. And so, if you can 3 recall, were those sessions very much geared to fixing 4 the couplers so far as the diaphragm wall cages were 5 concerned? 6 A. As part of the run-down of the training itself, 7 I usually go through the entire QA/QC quality assurance 8 menu, including the quality supervision plan, and that 9 basically covers from identifying what's a type 1 and 10 what's a type 2 coupler, and we also discuss type A and 11 type B in there as well, the type of installations that 12 are required, how to -- obviously, for steel fixers, we 13 focus on how to install the couplers, and we also talk 14 a little bit about coupler in terms of the traceability. 15 When I say "traceability" I mean the batch numbers that 16 are imprinted on the couplers itself, because as BD's 17 imposed condition, if you have ordered such and such 18 amount of couplers, you will need to perform a certain 19 amounts of tests, and those tests are actually 20 stipulated in the BD-imposed condition or the so-called 21 engineering manual. 22 Of course we do go through the quality supervision 23 plan. The quality supervision plan is an enhanced site 24 supervision, so it's more of an audit/checking system 25 for both supplier, like BOSA Technology, ourselves, and</p>
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<p>1 should be an email there that you sent four days ago to 2 BD, do you see that, on 13 December? 3 A. Yes, I can see that. 4 Q. If we go over the page to -- let's do it in 5 chronological order -- 45190, that's a training 6 attendance record of 27 August 2013; is that right? 7 A. Yes, that's correct. 8 Q. We can see that that was to Intrafor's engineer, welder, 9 and a number of steel fixers; do you see that? 10 A. Yes. 11 Q. In fact, allow it says "Intrafor", we know that actually 12 some of those gentlemen were from Hung Choi, who was 13 Intrafor's sub-contractor. 14 A. I wasn't aware, sorry. 15 Q. Because one of them, the third one down, Wong Yiu Mo, in 16 fact was a witness some time ago and we heard from him. 17 So there was that training session, and at the 18 previous page, 45189, there was another session on 19 2 October 2013, and we can see the various people who 20 attended that, including Edward Mok and others; do you 21 see that? 22 A. Yes, I see that. 23 Q. Could you then be shown page 45913. Sorry, before we 24 look at that, those two attendance records you've just 25 looked at, Mr Lim, those training sessions took place</p>	<p>1 for supervision for assembly at the job site. 2 Q. What about the keeping of records? 3 A. Yes, there are two forms that need to be completed, 4 appendix C and appendix B, I would recall. Those are 5 the two forms that, once filled in, need to be kept 6 on site, in the logbook, for later submission to BD. 7 Q. Right. 8 COMMISSIONER HANSFORD: Mr Lim, can I just ask, on this 9 sheet that we now see, are the only people who attended 10 the ones who actually signed? 11 A. I honestly cannot recall. It's been a long time ago. 12 But it might be the case that those who signed were the 13 ones that attended the meeting. Generally, I give the 14 presentation, but these attendance records are actually 15 circulated. I don't always get a copy of it. I was 16 lucky to have one copy to show today. But we do 17 training sessions on request from Leighton, organised by 18 Leighton, whenever they are required. 19 COMMISSIONER HANSFORD: Is it the case that the names on the 20 left are the people who were scheduled to attend, and 21 the signatures are those that certainly attended, but 22 you perhaps don't know about the other ones? 23 A. No, I can't be certain. 24 MR PENNICOTT: Can I point out that on 45189, the third name 25 down is Kobe Wong, and I recall that during the course</p>

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<p>1 of his evidence he was shown -- I mean, Leighton have 2 disclosed two of these sheets in any event -- they are 3 attached, I think, to Mr Lumb's report -- Kobe Wong 4 confirmed that although he didn't sign, he did attend. 5 COMMISSIONER HANSFORD: Okay. 6 MR PENNICOTT: That's my recollection from Mr Wong's 7 evidence. 8 COMMISSIONER HANSFORD: That's helpful. 9 MR PENNICOTT: As to the others, I can't offer a view. 10 The reason, Mr Lim -- I've just spotted it -- 11 I asked you about "were you also known as Paul Lam" is 12 that we can see on both of the sheets that we've just 13 looked at, at 45189 and 190, the name "Paul Lam" 14 appears. 15 A. Yes. 16 Q. But it was you? 17 A. Yes, it was me. 18 COMMISSIONER HANSFORD: Actually, I think your name appears 19 twice here, both as the trainer and as one of the 20 attendees. 21 A. They probably -- you know, the circulation came to me 22 and I thought I would just write my name on it. 23 COMMISSIONER HANSFORD: That's fine. 24 A. Not noticing that my name was actually printed on the 25 top, probably, at that time.</p>	<p>1 responsible for the training, and so forth. 2 Then, over the page, you say this, about four lines 3 up in answer 5: 4 "I liaised with Kelvin Harman ..." 5 Now, Kelvin/Kevin -- it's Kevin. 6 A. Sorry, Kevin. 7 Q. "... the quality manager of Leighton ... about how to 8 improve the coupler checking forms." 9 Now, do you confirm that you obviously had 10 a recollection of that when you made this statement? 11 A. Kevin is basically the person who have a copy of the 12 quality supervision plan, and he had, at the time, as 13 I recall, looked at the checklist, check form, assembly 14 of couplers at the job site. That particular form, he 15 basically, you know, asked for copies of it in 16 a spreadsheet, because he wanted to modify it being 17 a bit more specific to MTR and Leighton, in terms of 18 definitions such as who is the RSE and who is the RC. 19 So I recall basically that was the discussion we had on 20 that particular form. 21 Q. Okay. You go on to say you often dealt with Edward Mok 22 for processing coupler purchase orders. 23 A. Yes. Edward very frequently comes to our job site 24 container office. He is, you could say, the principal 25 person that we deal with in terms of receiving purchase</p>
Page 78	Page 80
<p>1 MR PENNICOTT: Okay. So those were a couple of training 2 sessions. 3 Just tell us how they came about. Were you asked to 4 do them by Leighton or did it happen in some other way? 5 A. With these training records, because they're 6 categorised -- you can see at the top right-hand corner, 7 TR-001, et cetera, and 002 -- so I assume these sessions 8 were organised by Leighton, but I can't fully remember. 9 With MTR being involved, generally speaking it would 10 have to be something that's organised by Leighton. 11 Q. We see from another page, 45192, at the bottom, there's 12 a note which I believe, and you can confirm, was written 13 by Kevin Harman; is that right, Mr Lim? 14 A. I can't remember, I'm sorry. It does say "Kevin" 15 though. 16 Q. Right. Do you recall having -- 17 A. No, I cannot remember that. 18 Q. You can't? 19 A. I certainly cannot remember. It's been too long. 20 Q. The reason I ask that, Mr Lim, is that in your witness 21 statement, at answer 5 on page 44826 -- we will be 22 coming back to the training things in a moment -- in the 23 context of training you say -- the question was, "Please 24 briefly describe your roles and responsibilities for the 25 site works", and then you go on to say you were</p>	<p>1 orders. Purchase orders do include both couplers and 2 for threaded bar to be used for the job site. 3 Q. All right. If we could just go back to the training 4 attendance records. Could we please now go to 5 H26/45193. Again, I think this is a document you've 6 seen before. It's attached to Mr Lumb's report. 7 As I understand it, this is another training record 8 document, dated 1 November 2014. 9 A. Yes. 10 Q. I don't know if you're able to confirm this but our 11 understanding is that the trainees listed there, the 12 three gentlemen, were from Fang Sheung? 13 A. I was told they were from Fang Sheung. 14 Q. Right. You were told at the time? 15 A. Yes. 16 Q. I see. And the training, it says here: 17 "Teach steel fixer how to install coupler to 18 threaded bar. Advice tolerance allowance." 19 What do the words "Advice tolerance allowance" mean, 20 Mr Lim? 21 A. Under the quality supervision plan we have 22 an appendix D. That appendix D has a table which 23 details the tolerance that we permit for threaded bars. 24 I believe it will be under -- you probably call them 4, 25 if you've got that appendix in front of you, appendix D</p>

<p style="text-align: right;">Page 81</p> <p>1 under the QSP, and we do have a little note -- sorry, 2 can I just be taken to that page? 3 Q. Of course. Yes, the QSP is there. 4 A. Yes. 5 COMMISSIONER HANSFORD: Have you got the page number? 6 A. I think it says H44853 and 854. 7 MR PENNICOTT: Yes. 8 A. It's the tolerance that we permit for the threaded bars 9 that we supply, and it does clearly state the tolerance, 10 which is a positive tolerance, that we permit for the 11 threaded end bars. And on the bottom we do actually 12 make a bit of a note about how we programme our CNC 13 programmable machines to always -- to produce positive 14 tolerance to ensure -- the idea is to ensure that the 15 two bars can have a butt-to-butt connection. 16 COMMISSIONER HANSFORD: Sorry, Mr Lim, can you just explain 17 that butt-to-butt connection and how important that is? 18 A. Under normal circumstances, when your thread length is 19 ideally perfect, in terms of its length, "T", if you 20 look at the table -- 21 COMMISSIONER HANSFORD: Yes. 22 A. -- when the two ends meet, after you've tightened the 23 two rebar inside of the coupler, they will be touching 24 on the end, and that's something we refer to as 25 butt-to-butt.</p>	<p style="text-align: right;">Page 83</p> <p>1 Q. That's right. 2 A. Okay. 3 Q. You appear to have been there on this occasion? 4 A. I was in our fabrication yard, preparing for the 5 sampling of the rebar for testing, so I was there. 6 Q. So you were assisting those who were coming to do the 7 audit, as I understand it? 8 A. That is correct, yes. 9 Q. We can see your name on page 4798 as being the BOSA 10 representative. 11 A. Yes, I see it's here, but I can't recall this form. 12 Q. Just going through to page 4800 -- a rather nice 13 photograph of the fabrication yard at the top -- and 14 then what I wanted to ask you about is page 4803. 15 There are two photographs there, Mr Lim, which 16 are -- the description says, "2nd step -- control 17 crimping process", and then the next one is "Crimped 18 rebar". 19 Can you explain to us what crimping is and what 20 purpose it serves? 21 A. Crimping is one of the crucial steps that we would 22 perform for our type 2 coupler. The crimping process is 23 actual strength-hardening procedure that we have for our 24 type 2 coupler. So that's basically strength-hardening 25 the rebar before we thread -- produce the threads.</p>
<p style="text-align: right;">Page 82</p> <p>1 COMMISSIONER HANSFORD: I'll ask it at this point rather 2 than later: and how important is it for them to be 3 butt-to-butt? What does that do? 4 A. When you are -- if you -- because some of -- the 5 requirement for a type 1 coupler is you -- there's two 6 testing required. The first one is an elongation test, 7 where the sample is loaded to 0.6 FY(?), and in between 8 you've got a gauge that actually checks to see how much 9 of the rebar, once the stress has been released, how 10 much movement is within that connection, and if it 11 exceeds 0.1mm then it's deemed as a failed sample. 12 Butt-to-butt ensures that you actually would not have 13 a problem. 14 COMMISSIONER HANSFORD: I see. Thank you. 15 MR PENNICOTT: Could I then please ask you, Mr Lim, to be 16 shown bundle H12, at page 4797. 17 Mr Lim, I don't know whether this is a document 18 you'll have ever seen before, but we have heard and seen 19 that on 22 and 24 January 2014, you were paid a visit, 20 to the fabrication yard, by representatives of Pypun, 21 who were the M&amp;V, monitoring and verification, engineers 22 working for the government. 23 A. Do you mean BD? 24 Q. Part of BD, effectively, yes, that's right. 25 A. Okay. Is this the auditing?</p>	<p style="text-align: right;">Page 84</p> <p>1 Q. Right. And that's done by one of the automated machines 2 that we saw reference to in the sub-contract just 3 a moment ago? 4 A. Yes, that's correct. 5 Q. And I imagine we're looking at one in this photograph, 6 are we? 7 A. That's correct, yes. 8 Q. That's in the top photograph. All right. 9 COMMISSIONER HANSFORD: Sorry, when you say, Mr Lim, it's 10 one of the crucial processes for your type 2 coupler -- 11 I'm aware of type A coupler and type B coupler. Can you 12 be clear to me what type 2 coupler is? 13 A. Our type 1 coupler is the non-ductility coupler. 14 COMMISSIONER HANSFORD: Ah. 15 A. And our type 2 is the ductility coupler. We have, for 16 type 1 and type 2, standard thread which we say are 17 type A, and then we've got extended thread which we call 18 type B. 19 COMMISSIONER HANSFORD: Okay. So crimping is important for 20 a ductility coupler? 21 A. Yes. It's the key strengthening procedure. 22 COMMISSIONER HANSFORD: Okay. Thank you. 23 MR PENNICOTT: Okay. Perhaps we can just get you to confirm 24 some evidence we heard from somebody else the other day. 25 If you could go to 4805, it's a photograph at the top of</p>

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<p>1 that page, "4th step -- manual 'go/no go' test".</p> <p>2 Can you just explain to us what the "go/no go" test</p> <p>3 is?</p> <p>4 A. The "go/no go" gauge is used to test the tolerance of</p> <p>5 a thread being produced from our threading machine. So</p> <p>6 the "go" gauge should fully screw into the threaded bar,</p> <p>7 whereas the "no go" should not fully screw into the</p> <p>8 threaded bar. So this is a tolerance criteria.</p> <p>9 COMMISSIONER HANSFORD: So you have two of these rings, one</p> <p>10 is a "go" and one is a "no go"?</p> <p>11 A. That's correct.</p> <p>12 COMMISSIONER HANSFORD: And the "go" threads right in and</p> <p>13 the "no go" won't thread?</p> <p>14 A. That's right.</p> <p>15 COMMISSIONER HANSFORD: Thank you.</p> <p>16 CHAIRMAN: Sorry, can I just ask as well -- we've spoken</p> <p>17 about crimping -- where was the crimping done?</p> <p>18 A. The second step after we have square-cut the rebar --</p> <p>19 the second step is we crimp the bar.</p> <p>20 CHAIRMAN: At both ends?</p> <p>21 A. No. We do one end first, because it's quite -- it's</p> <p>22 synchronised. The cutting of one rebar takes about</p> <p>23 20 or 30 seconds, and at that time you would roll over</p> <p>24 to the second machine, which is a crimping machine, and</p> <p>25 that also takes approximately the same amount of time,</p>	<p>1 like a pencil. It's quite sharp. And when the bar goes</p> <p>2 into the coupler, literally all the threads are actually</p> <p>3 inside the coupler, and that particular type of rebar,</p> <p>4 or I should say coupler system, do require calibrated</p> <p>5 torque to tighten the splice. But for parallel thread</p> <p>6 you do not need a calibrated torque. You just need to</p> <p>7 tighten it with a typical pipe wrench.</p> <p>8 COMMISSIONER HANSFORD: So all the couplers you supplied</p> <p>9 here were the parallel thread type?</p> <p>10 A. That's correct.</p> <p>11 CHAIRMAN: Could I ask you: were all the couplers ductility</p> <p>12 couplers?</p> <p>13 A. We also sold approximately -- figure's yet to be</p> <p>14 confirmed -- approximately 65,000 type 1 couplers as</p> <p>15 well for this project, but the majority was in fact</p> <p>16 type 2.</p> <p>17 CHAIRMAN: And type 1 are the ductility?</p> <p>18 A. Type 2 is the ductility.</p> <p>19 CHAIRMAN: Sorry.</p> <p>20 MR PENNICOTT: Mr Lim and Chairman, if we go to H26/45194 --</p> <p>21 Mr Lim, following your witness statement to the</p> <p>22 Buildings Department, not only did you supply them with</p> <p>23 the training attendance records that we had a look at</p> <p>24 just a moment ago, you also supplied them with some</p> <p>25 records about how many couplers have been supplied on</p>
Page 86	Page 88
<p>1 and the threading machine also takes approximately</p> <p>2 25 seconds or thereabouts to produce one thread as well.</p> <p>3 So the three machines are all lined up together on one</p> <p>4 production line.</p> <p>5 COMMISSIONER HANSFORD: So you only crimp the end that's</p> <p>6 going to be threaded?</p> <p>7 A. That's correct.</p> <p>8 CHAIRMAN: And you don't crimp on site, as such; you crimp</p> <p>9 before you bring or deliver the bars to site?</p> <p>10 A. The crimping process is part of our production line</p> <p>11 cycle that we do, so once -- before we do the threading,</p> <p>12 we would have crimped the bar first, and then once it's</p> <p>13 threaded we either install a coupler on to that end or</p> <p>14 use a PVC cap to protect the threaded bar.</p> <p>15 CHAIRMAN: And while we are on this, there's a torque</p> <p>16 machine. Do your couplers require the employment of</p> <p>17 such a machine?</p> <p>18 A. No. Our -- there are two types of threads that you</p> <p>19 could say. The first one is our type, which is parallel</p> <p>20 thread. With parallel thread, basically each thread is</p> <p>21 uniform. So if you screw in X amount of threads inside</p> <p>22 of a coupler, you can literally calculate the amount of</p> <p>23 tensile strength that you can achieve from that number</p> <p>24 of threads being engaged; whereas for taper thread --</p> <p>25 I don't have a sample here -- but taper thread is a bit</p>	<p>1 this job; is that right?</p> <p>2 A. That's correct.</p> <p>3 Q. If we actually just go to the last page, to 45200, we</p> <p>4 can pick up the total numbers, and my understanding is</p> <p>5 that the 324,369, that's the ductility couplers?</p> <p>6 A. That's correct.</p> <p>7 Q. And the figure of 60,368 is the non-ductile?</p> <p>8 A. That's correct.</p> <p>9 Q. Then we have the total there as well.</p> <p>10 COMMISSIONER HANSFORD: On these numbers, these were the</p> <p>11 actual numbers supplied, or was this estimated?</p> <p>12 A. This information was filtered out of our invoicing</p> <p>13 system that we obviously have already invoiced Leighton.</p> <p>14 COMMISSIONER HANSFORD: So these ones were supplied and paid</p> <p>15 for by Leighton?</p> <p>16 A. Yes, that's correct.</p> <p>17 COMMISSIONER HANSFORD: Thank you.</p> <p>18 MR PENNICOTT: Sir, we have of course got the samples here</p> <p>19 that I think were originally supplied kindly by BOSA.</p> <p>20 If there's anything you would like to ask Mr Lim about</p> <p>21 them, I'm happy to --</p> <p>22 CHAIRMAN: Yes, just show us again, please. Apart from</p> <p>23 anything else, it's good to be reminded.</p> <p>24 COMMISSIONER HANSFORD: We seem to have seen them in</p> <p>25 a previous galaxy.</p>

Page 89	<p>1 A. Okay. Visually, it's quite easy to identify and</p> <p>2 distinguish between our type 1 coupler and our type 2</p> <p>3 coupler, because a type 2 coupler has two distinct rings</p> <p>4 on the coupler itself, on the top as well as the bottom.</p> <p>5 For the thread itself, you can also see -- because</p> <p>6 the requirement from BD is not very high for type 1</p> <p>7 coupler, our strength-hardening procedure is quite</p> <p>8 simple on the type 1. So, as part of our manufacturing</p> <p>9 process, the ribs that we usually use for bonding with</p> <p>10 concrete is peeled away. So we have this minimum of</p> <p>11 10mm circle peeling trace as distinction from our</p> <p>12 type 2, which we will have to provide a minimum of 5mm</p> <p>13 crimping trace. So there's a distinct difference</p> <p>14 between the two threads as well.</p> <p>15 Other than the coupler itself, we also adopt</p> <p>16 a two-colour system. The type 1 coupler we use,</p> <p>17 everything is in blue, from the tags to the PVC cap that</p> <p>18 protects the coupler as well as the threaded bar, all</p> <p>19 being blue. Then for the type 2 we have chosen red</p> <p>20 colour, so everything from the PVC cap to the tags will</p> <p>21 all be red. So in terms of identification purposes, it</p> <p>22 should be quite reasonably easy to distinguish between</p> <p>23 our type 1 and type 2.</p> <p>24 COMMISSIONER HANSFORD: Can they be substituted, though? If</p> <p>25 a -- sorry, non-ductile is type --</p>	Page 91
Page 90	<p>1 A. 1.</p> <p>2 COMMISSIONER HANSFORD: Type 1. So if a type 1 is specified</p> <p>3 but a type 2 is used instead, is that acceptable?</p> <p>4 A. That is not the proper system. You can, however,</p> <p>5 install a type 1 thread into a type 2 coupler, by</p> <p>6 mistake, I suppose, but following our QA/QC assurance</p> <p>7 manual, you should not and you cannot install a type 1</p> <p>8 thread into a type 2 coupler, because the end result is</p> <p>9 you've provided a weakened mechanical splice, because</p> <p>10 the requirement for a type 1 and a type 2 is different.</p> <p>11 COMMISSIONER HANSFORD: So, therefore, in every location</p> <p>12 where a coupler is specified, one needs to make sure it</p> <p>13 both has the correct coupler and the correct threaded</p> <p>14 bar?</p> <p>15 A. Yes, that's correct.</p> <p>16 COMMISSIONER HANSFORD: Okay.</p> <p>17 MR PENNICOTT: Just to -- if I've understood those last few</p> <p>18 questions and answers properly, if we go to your witness</p> <p>19 statement, at H25/44831, at question 23, Mr Lim, the</p> <p>20 question was this:</p> <p>21 "Technically, would it be acceptable if type B</p> <p>22 coupler" -- type B, that's the longer one, as</p> <p>23 I understand it, type 2 or type B -- "is changed to</p> <p>24 type A coupler by cutting thread portion on site?"</p> <p>25 In other words, you were being asked: would it be</p>	Page 92
	<p>1 acceptable to convert a type B coupler into a type A,</p> <p>2 although I think the question really should be directed</p> <p>3 at the threaded rebar, not the coupler.</p> <p>4 A. Yes, on the threaded rebar.</p> <p>5 Q. Right. So let's rephrase the question: technically,</p> <p>6 would it be acceptable if type B threaded rebar is</p> <p>7 changed to type A threaded rebar by cutting the thread</p> <p>8 portion on site?</p> <p>9 Your answer was:</p> <p>10 "Technically, possible on condition of perfect</p> <p>11 cutting. But, this change is highly not recommended.</p> <p>12 After the media report of alleged cutting of threaded</p> <p>13 rebars, John, Leighton's project director ..."</p> <p>14 That was Jon Kitching, was it?</p> <p>15 A. I believe so, yes.</p> <p>16 Q. "... once asked me about the same question."</p> <p>17 So this is really your position, as I understand it,</p> <p>18 Mr Lim: technically, it's possible, perfect cutting, but</p> <p>19 you do not recommend it; indeed you highly do not</p> <p>20 recommend it?</p> <p>21 A. I saw the Apple Daily demonstrated that they can cut the</p> <p>22 long thread into a short thread, which they did, because</p> <p>23 they cut it into a two-thread length and sent that off</p> <p>24 to the lab to pull, and we all saw that on the news.</p> <p>25 After seeing that, okay, it could be possible to cut the</p>	

Page 93	1 CHAIRMAN: So, basically, then, while you would not 2 recommend it and while it would reduce, for example, 3 tensile strength, it is possible -- 4 A. Yes, it is. 5 CHAIRMAN: -- if you get the knack, to cut one and still 6 insert it into -- 7 A. Yes, it would seem so, yes. 8 CHAIRMAN: You've never done it yourself? 9 A. No -- 10 CHAIRMAN: By that, I didn't mean on site somewhere, I meant 11 obviously you have never done it by way of testing or 12 anything like that? 13 A. No, because our automatic cutting machine has a very 14 powerful grip. If you were to put that bar into a grip 15 halfway through, the thread would be crimped as well as 16 it's being gripped. So there's a very high possibility 17 if you have done it through using our cutting machine, 18 in our normal production line machines, that has a very 19 high chance of damaging the actual thread itself. 20 CHAIRMAN: Okay. 21 A. So it would be quicker if we just redo the thread. 22 MR PENNICOTT: All right. Could I ask you, please, to be 23 shown B17/14261. 24 Mr Lim, again, this is probably a document you will 25 not have seen before. It's what's called	Page 95	1 direction you are looking at from that angle. So the 2 angle obviously makes it sometimes easier to identify 3 whether it's been crimped or not crimped. 4 MR PENNICOTT: Finally from me, Mr Lim, could you please be 5 shown a photograph which we are all familiar with, 6 D1/228. 7 Can we please blow up, as far as we possibly can -- 8 keep going, keep going, keep going, keep going; right, 9 that's fine -- Mr Lim, are you able, by carefully 10 perhaps counting the number of threads and so forth, to 11 tell us whether this is a type A or a type B threaded 12 rebar? 13 A. By just visually counting the number of threads from 14 this photo, I think there will be about 13 threads in 15 this one here. 13 threads would be likely to be 16 a diameter 50 rebar, and 13 threads is a normal type A 17 thread. 18 COMMISSIONER HANSFORD: Type A? 19 A. Yes. 20 MR PENNICOTT: Right. Would your answer be different if the 21 conclusion had been reached that this bar had been cut? 22 A. I cannot tell from here. I'm not too sure whether this 23 is after it's been cut. 24 Q. I was asking you to make the assumption that it had been 25 cut.
Page 94	1 a non-conformance report, produced, as you can see, on 2 4 September 2018. I'd just like you to look at 3 a photograph which I hope is at 14268. It's the 4 photograph number 4, NCR258; do you see that, bottom 5 right? We can see perhaps blow that one photograph up. 6 Are you able to tell, Mr Lim, whether that first bar 7 that we can see, whether it's crimped or not? 8 A. Can you zoom it up a little bit bigger? 9 Q. Sure. 10 A. Yes, that bar has been crimped. 11 Q. Thank you very much. 12 CHAIRMAN: How can you tell? It just goes narrower or ...? 13 A. Yes. If you see the cross-sectional rib going back 1, 14 2, 3 along the bar -- 15 CHAIRMAN: Yes. 16 A. -- you can see that actually is a lot more evident. And 17 then if you look back one step, you can see that bar has 18 already been crimped because it's slightly flattened. 19 That particular rib has been compressed. 20 CHAIRMAN: I'm with you, the same as the second one back? 21 A. Yes, exactly right. 22 CHAIRMAN: You can see the same thing. 23 A. And that bar following that is a lot more evident 24 because of the direction of that longitudinal rib, we'll 25 call it, it's almost a lot more visible because of the	Page 96	1 A. Oh, it had been cut? I couldn't tell. I'm sorry, 2 I couldn't tell. 3 MR PENNICOTT: That's all right. I just thought we would 4 ask since we've got you here. 5 Sir, thank you very much. I have no further 6 questions. I don't know whether anybody else has. 7 Questioning by THE COMMISSIONERS 8 CHAIRMAN: Thank you. I just want to ask -- were you there 9 between about August 2015 and late September 2015, 10 on site, I think? 11 A. I usually always go to site, especially in the morning, 12 because I usually always check on -- 13 CHAIRMAN: And can I ask you, how much business is going on 14 in the sense of people coming and saying, "This bar is 15 no good" or "The threads have broken or been damaged"? 16 Is there quite a lot of toing and froing, replacing? 17 A. No, we didn't have many. In fact, so far, I would say, 18 for that project, we might have supplied something in 19 the vicinity of 650,000 threads, and we did receive one 20 complaint from Intrafor, where they have detected 21 20-something threads which appear to be out of our 22 tolerance. That would have been it. I haven't actually 23 received any other complaint. 24 CHAIRMAN: All right. Did anybody ever come to you with a 25 rebar where the threads had been cut off and ask for a



<p style="text-align: right;">Page 97</p> <p>1 replacement? 2 A. Cut off, as in -- 3 CHAIRMAN: Yes. 4 A. No, because it's quite simple, if they wanted additional 5 threads to be done, they just have to give us a purchase 6 order and we would immediately follow the purchase order 7 to thread in accordance with that order itself. 8 CHAIRMAN: Thank you. 9 COMMISSIONER HANSFORD: Sorry, I had two questions but I now 10 have three. A purchase order presumably could only come 11 from Leighton; is that correct? 12 A. A lot of engineers from Leighton would come into our 13 container with a preliminary order for what they need 14 for that particular area they are working on, and we 15 usually pass it straight to Edward Mok for approval. 16 Sometimes we may get a verbal go-ahead, and then we will 17 follow that up with a proper, fully filled-in form 18 afterwards. 19 COMMISSIONER HANSFORD: But you couldn't have a purchase 20 order from, say for example, Fang Sheung? 21 A. I can't recall receiving order from Fang Sheung 22 directly. No, I cannot. They would have to be approved 23 by Leighton. 24 COMMISSIONER HANSFORD: Right. My other two questions -- my 25 first one is: I don't quite understand question 20 in</p>	<p style="text-align: right;">Page 99</p> <p>1 have one or two threads exposed after the coupler is 2 connected. 3 If the threads are exposed, how can it be 4 butt-to-butt? 5 A. That's a very good question. If you refer back to 6 page 44854 -- in our design, when we are manufacturing 7 threads, we always programme our machine to produce 8 an extra 1 to 2mm on the actual length of our thread. 9 We just wanted to make sure that when the two ends abut 10 inside, connected inside of a coupler and tighten, that 11 they are actually butt-to-butt. 12 So if in a worst case scenario we were to have both 13 ends with a maximum tolerance -- for example the 14 diameter 40 rebar which says tolerance of 4mm, the 4mm 15 basically is one thread, equal to one thread, so if both 16 ends has a maximum tolerance of one thread, after you 17 have connected the two ends together, you will have 18 a chance of seeing two threads exposed. 19 COMMISSIONER HANSFORD: I understand that, but in that 20 bottom of those three diagrams, you show the coupler 21 being of length 2T, and the threads being T? 22 A. Yes. 23 COMMISSIONER HANSFORD: Are you saying the threads are 24 actually T plus one thread. 25 A. Yes, tolerance. T plus tolerance.</p>
<p style="text-align: right;">Page 98</p> <p>1 your witness statement, and your answer to question 20; 2 perhaps you could explain it. 3 A. I think this is in reference to our design calculation 4 table for the diameter 40 rebar which BD actually asked 5 from us. This particular table, I think it's at 6 appendix I -- let me just double-check. 7 It will be H44833. 8 COMMISSIONER HANSFORD: So the question and answer? 9 A. I think Mr Chan from BD was asking whether this design 10 calculation table for the diameter 40 rebar is 11 applicable to the coupler that we supplied for this 12 project. 13 COMMISSIONER HANSFORD: So what do you mean by "coupler 14 material has a tensile strength higher than rebar 15 materials, so it is applicable"? 16 A. Material that we use for -- design to use for our 17 coupler is S55C. The typical alternate tensile 18 strengths of our coupler design is within 700 to 750MPa. 19 Therefore, it is applicable in terms of its compliance 20 with BD's requirement. 21 COMMISSIONER HANSFORD: Okay. I understand now. My final 22 question -- probably my final question -- I'm still 23 a bit confused by your answer to a previous question 24 where you referred to butt-to-butt. Now, I know that 25 butt-to-butt means, but I thought you were allowed to</p>	<p style="text-align: right;">Page 100</p> <p>1 COMMISSIONER HANSFORD: T plus tolerance, and the tolerance 2 is one thread? 3 A. One thread. 4 COMMISSIONER HANSFORD: So, therefore, if they are 5 butt-to-butt, then you would have at least one thread on 6 one side -- well, you could have one thread on both 7 sides or you could have two threads on one side? 8 A. Yes. Essentially you could have -- you can shear it in 9 that way, I suppose. 10 COMMISSIONER HANSFORD: Because the tolerance would be the 11 exposed threads; is that correct? 12 A. If I can allow myself to do a quick demonstration. 13 COMMISSIONER HANSFORD: Please. 14 A. (Demonstrating). So on a normal, typical rebar, we 15 would have two ends which are threaded. One end we use 16 hand to screw on to the coupler and the other end we use 17 a PVC cap. So assume that the connecting bar, 18 continuation bar as you call it, is connected to the 19 coupler, when you start the rotation of the continuation 20 bar there will be some sort of separation 21 (demonstrating). I'm sorry about that. 22 CHAIRMAN: Don't worry. It's just a broken knee-cap, 23 I think. 24 A. Quite hazardous. 25 Because of the length of a typical bar, say 4 or</p>

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<p>1 5 metres long, you probably have some self-weight on 2 that particular bar. So once you sit the continuation 3 bar onto the coupler, the actual friction from the 4 self-weight will cause the coupler to rotate as you are 5 continually rotating the continuation bar. 6 You can see I am demonstrating the rotation of that 7 lower bar. In other words, the likelihood of all the 8 exposed threads should all come up on the continuation 9 bar. 10 MR PENNICOTT: On one side. 11 A. On one side, it's all one side. 12 COMMISSIONER HANSFORD: Which therefore would leave one of 13 two threads exposed? 14 A. Yes. 15 COMMISSIONER HANSFORD: And when one or two threads is 16 exposed, am I right in saying it's therefore 17 butt-to-butt? 18 A. It is assumed to be butt-to-butt, because unless 19 of course we are saying that there is -- the length is 20 actually perfect, for example, there's no tolerance, or 21 perfect length on that one. So yes, if there is 22 a tolerance, once you have tightened the connection and 23 you cannot go any further, then it will be certainly 24 butt-to-butt. 25 COMMISSIONER HANSFORD: Is that the same with a type B</p>	<p>1 A. Yes. 2 COMMISSIONER HANSFORD: That's very clear. Thank you. 3 MR PENNICOTT: Sir, can I just say for the record, for the 4 transcript, that the document that Mr Lim kindly took us 5 to at H25/44833, the English translation is at 6 H25/44527.1. 7 CHAIRMAN: Thank you. 8 MR PENNICOTT: That was the table that we looked at. 9 CHAIRMAN: Sorry, I was just -- for fear of embarrassing 10 myself, I was asking my colleague what "MPa" meant, and 11 it's a measurement of force. 12 MR PENNICOTT: Indeed. 13 CHAIRMAN: Thank you. 14 MR PENNICOTT: I'm just pointing out to the Commissioner -- 15 A. It's good for me. 16 MR PENNICOTT: We'll give you a copy. That's the 17 translation. 18 Sir, as I say, I have no further questions. I hope 19 that's been of some help. 20 CHAIRMAN: Yes, it has. Thank you very much. 21 MR PENNICOTT: I don't know if anybody else has any 22 questions. 23 CHAIRMAN: Yes. 24 Cross-examination by MR SO 25 MR SO: Sir, I have just very brief cross-examination in</p>
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<p>1 thread? 2 A. Type B thread is slightly different. (Demonstrating). 3 I'll try a bit more carefully. When we thread the 4 type B, we immediately screw the coupler in for 5 protection, because there's a lot of threads exposed. 6 So we use coupler to protect this side of the thread 7 (demonstrating). 8 COMMISSIONER HANSFORD: Yes. 9 A. And on the other side we would use a PVC cap. 10 So when the steel fixer takes the continuation bar, 11 they would butt up to the type B and start rotation 12 (demonstrating), to connect the continuation bar. So 13 they would continue to rotate until -- I'm going a bit 14 slow, it's a bit heavy -- until the coupler has fully 15 engaged to the type A. 16 So the end result is you will have approximately 17 half of the coupler left, plus the tolerance exposed. 18 COMMISSIONER HANSFORD: But presumably, then, there's even 19 more confidence with a type B -- 20 A. That's correct. 21 COMMISSIONER HANSFORD: -- that it would be butt-to-butt? 22 A. Correct, because it would have started off being 23 butt-to-butt. 24 COMMISSIONER HANSFORD: Exactly, and it can hardly move from 25 that.</p>	<p>1 light of what the professor has sought to clarify with 2 the witness. Just a very short point. 3 Mr Lim, I am Simon So, I represent China Technology. 4 The first -- I want to take you to see a photograph. 5 The photograph is at bundle D1/D232. Can I just invite 6 the Secretariat to blow up to the inverted number 7, the 7 instrument that looks like inverted number 7 in the 8 middle of the photograph. 9 CHAIRMAN: The wrench? 10 MR SO: The wrench. 11 Mr Lim, I heard your evidence just now. Would there 12 be any circumstances where, when workers are fixing the 13 threaded rebars onto the couplers, they would be 14 required to use the wrench? 15 A. Very typically, if you are talking about the sample that 16 I'm holding, which is pretty light in weight, your 17 typical length that you will find at the job site will 18 be anything between 4 to 5 metres long and they could be 19 quite heavy. You will find, regardless of what you do 20 or tell the steel fixer, they will, most likely, have 21 their typical tools to use, which is the typical pipe 22 wrench, to help them install the continuation bar into 23 the coupler. So they either can use that, or the chain 24 wrench is also another tool that you will find very 25 regularly at the job site for installation of coupler.</p>

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<p>1 Q. Can you tell us what type of wrench is this, so far as 2 you see from the photo? 3 A. From the photo, it looks like an ordinary pipe wrench. 4 Q. I see. Thank you. 5 The other topic that I only wish to deal with you is 6 regarding question 23 of your witness statement, which 7 my learned friend Mr Pennicott has brought you to 8 already. There, you were asked: was it acceptable for 9 type B threads, if changed to type A threads, by cutting 10 the threaded portion on site. My question is slightly 11 different to that. My question is: is it acceptable, in 12 terms of the specification of BOSA, for type B threads 13 without cutting to put into type A couplers? Is it 14 possible or is it allowed? 15 A. Let's assume, if -- for example, let's say -- let's not 16 assume, let's say, if the designer said you were 17 supposed to use, you were supposed to order a type A and 18 you ordered a type B, that would probably be a more 19 likely scenario, I think. If you were an RSE or RC, the 20 T3 assigned supervisor on site, doing your sign-off 21 work, and you saw perhaps five threads not fully 22 engaged, then you will probably have a problem. You 23 would think they are not screwed in at all. From that 24 perspective, you would think it would be wiser to have 25 a type A, where you can fully screw into the coupler,</p>	<p>1 they hadn't been screwed in, if you use a type B. That 2 would probably be the only logical, I suppose logical, 3 problem that you might come across. 4 Q. Sorry to labour on this point, but just to clarify -- 5 suppose we have a type A coupler here, so be it a type B 6 or type A thread, in BOSA's point of view it is both 7 acceptable for type B thread or type A thread, be it cut 8 or not, to be screwed inside a type A coupler; is that 9 the case? 10 A. Yes. 11 MR SO: Thank you. No further questions. 12 COMMISSIONER HANSFORD: I think I was happy with that until 13 you said "be it cut or not". 14 MR SO: Because that's the answer that this witness gave in 15 answer 23 in his witness statement. Therefore, I give 16 this qualification that "be it cut or not". 17 COMMISSIONER HANSFORD: Okay, but "be it cut", he said, is 18 highly not recommended. 19 MR SO: Indeed, but technically he said it is acceptable. 20 COMMISSIONER HANSFORD: Thank you. 21 CHAIRMAN: Thank you. 22 Cross-examination by MR KHAW 23 MR KHAW: Just a few questions from the government. 24 A. Yes. 25 Q. Earlier on, Mr Chairman asked you a question regarding</p>
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<p>1 then it makes the job of the next person who is going to 2 sign off on that particular site a lot easier because 3 they would not see any threads exposed, I suppose. That 4 would be the only logical answer that I think I've got 5 for you. 6 COMMISSIONER HANSFORD: Sorry, I thought the question was 7 slightly different. If one were to use a type B instead 8 of a type A threaded bar -- 9 A. Yes, it is possible. 10 COMMISSIONER HANSFORD: Well, is it possible and is it 11 acceptable? Would it change the properties -- 12 MR SO: Would it -- 13 COMMISSIONER HANSFORD: I'm sorry. You carry on. 14 MR SO: Would it reduce the tensile strength, the question 15 is? 16 A. No, it doesn't reduce the tensile strength, because we 17 are using type B and type A for this entire project. 18 Type B is an installation method, so instead of rotating 19 the continuation bar you are actually rotating the 20 coupler. 21 So, as I was saying, if you wanted to make the 22 inspection work easier, you would order the right type, 23 so you can make the job of the next person who is 24 looking at perhaps, you know, a design saying that there 25 should be a type A -- I think they may be misled that</p>	<p>1 whether there were any cases in which people said the 2 threads had broken or the threads were damaged and they 3 asked for replacement, and you told us that there was 4 one complaint from Intrafor which involved about 5 20 threaded rebars; do you remember that? 6 A. Yes. 7 Q. If I may just take you to see a few pictures, at E5, 8 starting from 1279. We can see that is a picture and it 9 shows some scrap metal after replacing damaged couplers, 10 and if we just move on to see a few more pictures, they 11 intend to show similar situations regarding damaged 12 couplers, and 1281 actually shows the damaged couplers, 13 as we can see. 14 Were you aware of the situation where the couplers 15 were damaged and had to be replaced? 16 A. You have jogged my memory. This photo I haven't seen. 17 None of these photos you have just shown, I haven't seen 18 either of them. 19 Q. I see. 20 A. But the couplers that are in our job site, basically 21 free for -- they are available for anybody to come and 22 take, provided they've got the label attached on them 23 saying they have been tested. 24 Q. Right. 25 A. We don't actually supervise who actually comes to take</p>

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<p>1 the couplers, because it is in the job site, but it is</p> <p>2 the case that we do remember -- I do remember one case</p> <p>3 where Fang Sheung came and took a couple of boxes of</p> <p>4 couplers to replace, but we had informed Leighton that</p> <p>5 they were taken, but for what purpose we were not sure.</p> <p>6 Q. I see. So you did receive additional order for couplers</p> <p>7 which would need to replace certain damaged couplers?</p> <p>8 A. No specific order to say it is for replacement couplers.</p> <p>9 They just make bulk orders. So they would place</p> <p>10 an order for, say, 10,000 couplers, and where they use</p> <p>11 and how they use it, we are actually not entirely sure.</p> <p>12 All we do follow is that if there is a green label</p> <p>13 attached to that pallet of couplers, then it is okay to</p> <p>14 use because they have been tested. If it's got a red</p> <p>15 colour tag on, which would say it's not tested, then all</p> <p>16 of our workers know we're not supposed to use that batch</p> <p>17 yet, until it's fully tested.</p> <p>18 Q. Would you have any record regarding the additional bulk</p> <p>19 orders of additional couplers?</p> <p>20 A. I have orders for couplers, but I would not be able to</p> <p>21 distinguish for the case of how many were being -- of</p> <p>22 that was basically for replacement of damaged couplers.</p> <p>23 We don't actually have that information. They would</p> <p>24 just simply give us an order saying, "We need another</p> <p>25 6,000 of this, 5,000 of that", and we just simply place</p>	<p>1 A. We basically helped them fill in one form, which is the</p> <p>2 thread-check form, which is I think under appendix C,</p> <p>3 I think it might be.</p> <p>4 Q. Yes.</p> <p>5 A. And we have adopted the minimum of 20 per cent</p> <p>6 inspection for our threaded bars.</p> <p>7 Q. Right.</p> <p>8 A. We do, as part of the training session, basically walk</p> <p>9 through the supervision requirements for the quality</p> <p>10 supervisors appointed by both MTR and Leighton, T3</p> <p>11 grade, what the supervision requirements are.</p> <p>12 Q. Yes. If we look at the supervision requirements here,</p> <p>13 at paragraph (5), "Supervision on site works", it says,</p> <p>14 "Beside the site supervision system as stipulated in the</p> <p>15 Code of Practice for Site Supervision, the following</p> <p>16 additional inspection will be carried out", and we have</p> <p>17 1 and 2. 1 is "Supervision and inspection by RC", and</p> <p>18 I take it that the "RC" here stands -- it's referring to</p> <p>19 Leighton; would you agree?</p> <p>20 A. Yes.</p> <p>21 Q. Then paragraph 2, regarding "Supervision and inspection</p> <p>22 by MTR on site".</p> <p>23 Now, if we look at the supervision and inspection by</p> <p>24 RC first, from BOSA's point of view, apart from the</p> <p>25 inspection which would need to be carried out after the</p>
<p>Page 110</p> <p>1 the order for them.</p> <p>2 Q. Right. And the orders came directly from Fang Sheung</p> <p>3 or --</p> <p>4 A. No, no. They come directly from Leighton, and generally</p> <p>5 it's through Edward Mok.</p> <p>6 COMMISSIONER HANSFORD: Sorry, so those replacement</p> <p>7 couplers, you didn't know they were going to be used for</p> <p>8 replacement, but they are included in those numbers you</p> <p>9 gave us earlier?</p> <p>10 A. That's correct.</p> <p>11 COMMISSIONER HANSFORD: Okay. Thank you.</p> <p>12 MR KHAW: Thank you. One more question regarding -- perhaps</p> <p>13 more than one -- the training session that you gave.</p> <p>14 We've seen the training attendance record, as referred</p> <p>15 to by Mr Pennicott.</p> <p>16 You told us that the training session primarily</p> <p>17 focused on quality assurance, and you also covered the</p> <p>18 quality supervision plan. If I can just very briefly</p> <p>19 take you to have a look at the quality supervision plan.</p> <p>20 H9/4265.</p> <p>21 I suppose you must be familiar with this document?</p> <p>22 A. Yes.</p> <p>23 Q. If we can just go to 4269. Can I just confirm with you</p> <p>24 whether some of the information as provided in this QSP</p> <p>25 was prepared by BOSA as well?</p>	<p>Page 112</p> <p>1 coupler installation had been done, from BOSA's point of</p> <p>2 view, insofar as supervision is concerned, would you</p> <p>3 agree that supervision was required for the purpose of</p> <p>4 actually overseeing the actual work when the coupler</p> <p>5 installation was being carried out; would you agree?</p> <p>6 A. Yes, I do point that out because in appendix B, which is</p> <p>7 a checklist check form --</p> <p>8 Q. Yes.</p> <p>9 A. -- it does detail some of the checklists that are</p> <p>10 required of the RC, and as well as MTRC to fill in when</p> <p>11 they are doing their supervision. The imposed</p> <p>12 condition, as stipulated from BD's engineering manual,</p> <p>13 does say, and we do tell in the training sessions that</p> <p>14 we usually run, that the RC is required to do full-time</p> <p>15 continuous supervision.</p> <p>16 Q. Thank you. If we go to the appendix that you've just</p> <p>17 referred us to, at page 4277 -- I believe this is the</p> <p>18 appendix that we have been talking about.</p> <p>19 A. Yes, that's correct.</p> <p>20 Q. The heading says "MTRC TCP-T3 independent checklist for</p> <p>21 on-site assembly of BOSA Seisplisce couplers in any</p> <p>22 location".</p> <p>23 Do I take it that it's clear from BOSA's point of</p> <p>24 view that such checklist applies to both the diaphragm</p> <p>25 walls and the platform slabs?</p>

<p style="text-align: right;">Page 113</p> <p>1 A. For any type 2, yes. For any type 2 couplers, we 2 automatically tell the clients that this form needs to 3 be kept and filled -- filled in and kept in a logbook. 4 CHAIRMAN: Is that the same with other branded couplers, do 5 you know? 6 A. I am not 100 per cent sure, but based on the imposed BD 7 condition -- because our QSP and our quality assurance 8 manual is consistent with BD's imposed conditions. So, 9 yes, I would assume so. 10 CHAIRMAN: Why is it necessary for there to be this 11 supervision? 12 A. We are just strictly following the BD's requirement. 13 CHAIRMAN: All right. So it's a Buildings Department -- 14 A. Yes. 15 MR KHAW: Can you tell us whether this record-keeping 16 requirement was covered in the training session? 17 A. Yes. We run through appendix B. The reason we run 18 through them is because it actually really consisted of 19 very practical measures. For example, if you were 20 concreting and you had the coupler which would be 21 embedded inside the concrete, you would definitely 22 tighten the coupler before you pour concrete. In 23 column 2, "Has the coupler been cleared of any foreign 24 [matters]?" So it's more -- quite practical, as you can 25 see from that point of view. So it's cleanliness of the</p>	<p style="text-align: right;">Page 115</p> <p>1 A. So I would take it literally, that one. I'm not very 2 sure. 3 COMMISSIONER HANSFORD: Thank you. 4 MR KHAW: Finally, can I just confirm with you whether, in 5 the training session, the message was conveyed to the 6 participants that such appendix, ie this record-keeping 7 exercise, would be needed for any location where coupler 8 installations were carried out? 9 A. Yes. We always say, for type 2, these two forms, 10 particularly the appendix B, must be followed. 11 MR KHAW: Thank you. I have no further questions. 12 CHAIRMAN: I take it no further questions? 13 MR CONNOR: None, thank you, sir. 14 MR BOULDING: I have a couple of questions, sir. I don't 15 know if you would like me to put them know or after the 16 break. I'm entirely in your hands. 17 CHAIRMAN: What time are we -- 18 MR PENNICOTT: It's probably my fault, but we are running 19 a bit behind and we need to connect up with London 20 relatively soon, although I think a communication has 21 been sent to London that we are a bit behind. 22 SECRETARY: We need to test it too. 23 CHAIRMAN: Mr Boulding, would it be all right if we 24 continued straight on? 25 MR BOULDING: Of course it will be, sir.</p>
<p style="text-align: right;">Page 114</p> <p>1 coupler and the thread itself before you actually do the 2 necessary work. 3 And point 4 is after you have connected the rebar 4 into the coupler, that you would make sure it is within 5 tolerance, after you've tightened the connection bar. 6 And the last one, which I must admit I'm not very sure 7 how this one is checked, is for verticality -- I assume 8 they will use a spirit level for that one. 9 COMMISSIONER HANSFORD: Sorry, on that last one -- because 10 we were pondering this one before -- verticality 11 checking, presumably, almost obviously, that's only for 12 vertical couplers? 13 A. I assume so. I would imagine, if you're using coupler 14 from floor to floor on a typical building, if the rebar 15 is slightly bent to one end (demonstrating), you might 16 be able to connect to that existing connection. 17 However, the next connection might be very difficult 18 because you might experience misalignment problems. 19 I think -- I would assume there's some sort of reason 20 for rejecting anything that is beyond 10 per cent. 21 COMMISSIONER HANSFORD: Yes, I understand that, but for 22 horizontal couplers, presumably this column is not then 23 required? 24 A. Yes, I think it says "verticality". 25 COMMISSIONER HANSFORD: It does, yes.</p>	<p style="text-align: right;">Page 116</p> <p>1 CHAIRMAN: Thank you very much. 2 Cross-examination by MR BOULDING 3 MR BOULDING: Good afternoon, Mr Lim. Just one or two 4 matters I'd like to clarify with you, because it's not 5 entirely clear on the transcript what you were saying as 6 far as we're concerned. 7 You will recall, will you not, that you were asked 8 about cutting threaded rebars? 9 A. Yes. 10 Q. And in particular, you were asked about cutting type B 11 threaded rebars to use with what were referred to as 12 type A couplers; do you remember that line of 13 questioning? 14 A. Yes. 15 Q. I think the conclusion that we were given was that it 16 was technically acceptable but not recommended? 17 A. Technically possible and not recommended. 18 Q. Right, you clarified something there for me then. Just 19 summarise, why do you say it is not recommended? 20 A. It is not in our standard installation practice. 21 Q. Right. So do I take it that you would regard any 22 cutting of the threaded rebars as a malpractice? 23 A. It would not be normal. It would not be normal 24 practice. 25 Q. Right. I wonder if we can look at a photo together.</p>

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<p>1 Could we go to photograph C40. 2 I don't know whether you've seen one of these 3 before. 4 A. No, I haven't, actually. 5 Q. We'll see where we can go with the questioning. We've 6 heard evidence that that object there is a rechargeable 7 electronic band saw. 8 A. Okay. 9 Q. Is that something you've ever used? 10 A. No, I haven't even seen this before. 11 Q. Right. Let me ask you this and we'll see how far we can 12 go. Just assume that that was used to cut off some of 13 the threads on the end of a threaded rebar. Do you have 14 a view as to whether that would risk damaging the 15 remaining threads? 16 A. I have never used this tool, and so therefore I don't 17 think it's appropriate for me to guess whether that 18 actually would be okay or not. 19 Q. Right. 20 A. I couldn't answer your question. 21 MR BOULDING: If you can't answer my question, I shan't push 22 you. Thank you very much. 23 Thank you, sir. That's my question. 24 CHAIRMAN: Good. Anything arising? No. 25 Thank you very much, Mr Lim. That's very good of</p>	<p>1 China, Dr McCrae. 2 Before proceeding with him, I think it's appropriate 3 just to mark a word of appreciation, Mr Chairman and 4 professor, to yourselves and the Secretariat and the 5 legal team led by Mr Pennicott for the arrangements that 6 have been made for Dr McCrae to give evidence rather 7 than travel to Hong Kong to do so, and of course 8 appreciation to the other parties' for their cooperation 9 in relation to that. 10 We have on the screen and indeed in London, live in 11 London, Dr McCrae. 12 Dr McCrae, can you hear us? 13 WITNESS: Yes, I can. 14 MR CONNOR: You are Dr Robert McCrae of Atkins China -- 15 CHAIRMAN: Perhaps you can check that he can hear us okay. 16 MR CONNOR: Dr McCrae, you can hear proceedings in 17 Hong Kong? 18 WITNESS: Yes, I can. 19 DR ROBERT WILLIAM MCCRAE (sworn) 20 Examination-in-chief by MR CONNOR 21 MR CONNOR: Just for the purposes of the transcript, would 22 you please confirm again, now that you have returned to 23 the microphone, that you are Dr Robert McCrae? 24 A. I am. 25 Q. Thank you. That's clear. You are also known as</p>
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<p>1 you. It's been a very considerable help. Thank you. 2 WITNESS: You're welcome. Thank you. 3 MR PENNICOTT: Can I also express our thanks and the 4 Commission's thanks to Mr Lim and BOSA for the 5 assistance they gave the Commission's expert when he was 6 last here, in various demonstrations and also in 7 providing the various exhibits that we've got as well. 8 CHAIRMAN: Yes. Thank you. 9 WITNESS: You're welcome. 10 CHAIRMAN: Good. Mr Lim, you can now leave. 11 WITNESS: Thank you. 12 CHAIRMAN: Thank you very much. We will return the exhibits 13 in due course. 14 WITNESS: It's okay. Keep them as a souvenir. 15 COMMISSIONER HANSFORD: A souvenir, thank you. 16 (The witness was released) 17 MR PENNICOTT: Sir, I think we need to break now and perhaps 18 we can let you know when we're ready to go with London. 19 CHAIRMAN: Yes. Thank you. 20 MR PENNICOTT: Thank you very much. 21 (3.50 pm) 22 (A short adjournment) 23 (4.15 pm) 24 MR CONNOR: Good afternoon, sir. Good afternoon, Professor. 25 We have the fourth witness now on behalf of Atkins</p>	<p>1 Rob McCrae? 2 A. That's correct. 3 Q. Thank you. Now, Dr McCrae, you are technical director 4 with Atkins, or SNC-Lavalin Atkins now? 5 A. Yes, that's correct. 6 Q. And you've been with Atkins for some 22 years? 7 A. Yes, that's correct. 8 Q. Your role as technical director is within the 9 infrastructure business of Atkins; is that so? 10 A. Of Atkins UK, yes, that's correct. 11 Q. Thank you. As you know, we are going to ask you some 12 questions this morning, London time, about your 13 involvement in the Shatin to Central project and 14 specifically the Hung Hom Station Extension project in 15 Hong Kong. You're aware of that, of course? 16 A. Yes, I am. 17 Q. In that regard, you had two roles in particular which 18 I'll just ask you to confirm. The first was as design 19 team leader for team A, working for Atkins on behalf of 20 MTRC; is that so? 21 A. That's correct. 22 Q. Thank you. If we can just have, for the record, please, 23 a couple of productions put in front of you. The first 24 of them, which is attached to Mr Blackwood's statement, 25 which is J1/8.0, and in particular turn to page J83.</p>

<p style="text-align: right;">Page 121</p> <p>1 We'll wait for a moment for you to have that. Let us 2 know once it's in front of you. 3 A. Yes, it's in front of me now. 4 Q. Thank you. J83 should be a sheet that is headed 5 "SNC-Lavalin Atkins", and it should say "Roles and 6 responsibilities of key for team A staff"; is that so? 7 A. That's so. 8 Q. Thank you. You will see below the description of the 9 project director's roles and responsibilities, there is 10 set out there the roles and responsibilities of the 11 design team leader; do you see that? 12 A. Yes, I do. 13 Q. Are you familiar with this description of your roles and 14 responsibilities in your team A role, Dr McCrae? 15 A. Yes, I am. 16 Q. Thank you. If you would be good enough to turn on, 17 please, further on, to a document at J89. That appears 18 to be a team structure. Let us know when it's in front 19 of you. 20 A. It's in front of me now. 21 Q. Thank you. This is a team structure which is dated as 22 at October 2015, and we understand that this is the team 23 structure for team A at that time. Is that so? 24 A. Yes, that's so. 25 Q. Thank you. I think we see your name as design team</p>	<p style="text-align: right;">Page 123</p> <p>1 Q. And that was for the Atkins team working to and 2 responsible to Leighton in relation to this project? 3 A. Yes, it was. 4 Q. Thank you. I think for the sake of completeness, you 5 held this role between May 2014 and April 2016? 6 A. Yes, that's right. 7 Q. If you would be good enough to turn to page J90, we see 8 then the organisation chart as at November 2014, and we 9 see you described there as project manager, around about 10 the middle of the page? 11 A. Yes, I can see that. That's right. 12 Q. In that regard, your interface was with Mr -- pardon me, 13 was with a Mr Brett Buckland of Leighton? 14 A. Yes, it was with Brett, yes. 15 Q. And we see again Mr Blackwood in a line out to the 16 right-hand side. So Mr Blackwood was someone who you 17 had some significant engagement with in this role also; 18 yes? 19 A. Yes, it is, that's correct. 20 Q. Thank you. 21 Now, in 2016 you relocated to the UK, and as you 22 have described earlier to the Commissioners you are 23 still with Atkins, and you are working as a project 24 director in relation to a section of the High Speed 2 25 project in the UK?</p>
<p style="text-align: right;">Page 122</p> <p>1 leader towards the top of the structure? 2 A. Yes, that's correct. 3 Q. In that regard, you reported to Mr Blackwood? 4 A. Yes, I did. 5 Q. Thank you. 6 The role that you had as design team leader you held 7 between November 2014 and April 2016; is that so? 8 A. That is so. 9 Q. Thank you. 10 Now, if I can ask you to return to the "Roles and 11 responsibilities" section at page J85, and let us know 12 once that page is in front of you, please. 13 A. Yes, I believe it is now. 14 Q. Thank you. That should be a page headed, "Roles and 15 responsibilities of key for team B staff"; is that so? 16 A. That's so. 17 Q. You will see below "Project director" there is a heading 18 or rather a subheading "Project manager", with then 19 there is followed a description of the roles and 20 responsibilities in that capacity. 21 A. Yes. 22 Q. Are these, as described here, the roles and 23 responsibilities that you held as project manager for 24 team B? 25 A. Yes, they are.</p>	<p style="text-align: right;">Page 124</p> <p>1 A. Yes, that's correct. 2 Q. Thank you. But it's with regard to your Hong Kong roles 3 that you give evidence to this Commission, and if you 4 would be good enough to identify your witness statement, 5 which we will ask to have put up in front of you, and 6 that is J4/9.0. Let us know once it's in front of you, 7 please. 8 A. Yes, it's there and I identify it. 9 Q. Thank you. I think it begins at page J3344; is that so? 10 A. That is the identification at the top of the page, yes, 11 and at the base, yes. 12 Q. Thank you. This is your witness statement? 13 A. Yes, it is. 14 Q. Just while you're on the document, it might be 15 convenient if we turn to paragraph 48 of the document. 16 You'll see that that is on page J3351; do you see that? 17 A. I do. 18 Q. Thank you. This is the section of your statement where 19 you deal with the alleged change of connection details 20 between the EWL slab and the east diaphragm walls; do 21 you see that? 22 A. I do. 23 Q. In this section, which I think lasts for some three or 24 four pages, you begin in paragraph 48 by confirming to 25 the Commissioners that you have read Mr Blackwood's</p>

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<p>1 witness statement at paragraphs 60 to 96 and you agree 2 with the comments stated there. Is that so? 3 A. That's so, yes. 4 Q. Thank you. So your evidence we will come to in its 5 entirety in a moment, but for the purposes of your 6 evidence in relation to the alleged change in connection 7 details, you convey to the Commission Mr Blackwood's 8 evidence, which you've read and which you agree, as 9 added to by the paragraphs which then follow 10 paragraph 48; is that so? 11 A. That's so. 12 Q. Thank you. Again, just for the sake of convenience, can 13 you turn to paragraph 62. You'll see that that is on 14 page J3353; do you see that? 15 A. I do. 16 Q. Now, I think this is a minor correction which you drew 17 to my attention in the last day, which relates to 18 line 4, where there is reference to "EH72 and EM74". Do 19 you see that reference? 20 A. Yes. Shall I explain? 21 Q. Yes, please do. 22 A. I have transposed the H and the M. Panel 72 is actually 23 a missed panel so it should have been EM72, and panel 74 24 is a hit panel, so it should have been EH74. 25 Q. Thank you very much. While we are on some minor</p>	<p>1 in front of me, will ask you some questions on behalf of 2 the Commission, and then some other lawyers in this room 3 may have some questions for you, so they will then 4 proceed. The Chairman and the professor may have 5 questions for you at any time, and I know you will do 6 your best to assist the Commissioners. Lastly, it may 7 come back around to me again to ask you a few more 8 questions. 9 Is that reasonably clear? 10 A. That's clear. 11 Q. Thank you very much, Dr McCrae. I will leave you with 12 Mr Pennicott. Thank you. 13 A. Thank you. 14 Examination by MR PENNICOTT 15 MR PENNICOTT: Dr McCrae, as Mr Connor has indicated, my 16 name is Ian Pennicott, I'm one of the lawyers to the 17 Commission, and I have a few questions for you. I'm 18 going to try to take them as quickly as I can. If at 19 any stage you can't hear me or there's a problem with 20 the documents, please just let us know. 21 We have covered quite a bit of ground with 22 Mr Blackwood already, but unfortunately there were areas 23 where he indicated that you might be a better witness to 24 ask questions of, but as I say I'm not going to 25 transverse over ground that I've covered with</p>
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<p>1 adjustments, we should just turn very quickly, please, 2 to the corrigendum at J4/9.0A, if you might have that 3 before you. 4 A. Yes, it's there. 5 Q. Thank you. This is another modest change which you have 6 made to your statement in the last week or so? 7 A. Yes, that's correct. 8 Q. Thank you very much. Would you just confirm, please, to 9 the learned Commissioners, Dr McCrae, that this witness 10 statement, together with the change which you described 11 in paragraph 62 and to the corrigendum make up your 12 evidence which you present to this Commission? 13 A. Yes, it is. 14 Q. Thank you. Again, just for the sake of completeness, 15 your CV is attached to that statement at page J3358. Is 16 that so? 17 A. That is so, yes. 18 Q. So is that witness statement, together with your CV, 19 your evidence, and is it true to the best of your 20 knowledge and belief, Dr McCrae? 21 A. It is my evidence and to the best of my knowledge it is 22 true. 23 Q. Thank you very much. Dr McCrae, I have no further 24 questions for you at this stage, but I should explain 25 what will happen next. Mr Pennicott, who's immediately</p>	<p>1 Mr Blackwood already and we'll just get straight down to 2 it, if we can. 3 Dr McCrae, first of all, we've seen, in the document 4 that Mr Connor took you to, the roles and 5 responsibilities of the project manager for team B and 6 the design team leader for team A. 7 Dr McCrae, in reality, were there any practical 8 differences between your duties and responsibilities in 9 those two roles? 10 A. In that I was reporting to different clients, there were 11 obviously matters which were privy to one part and 12 perhaps not privy to the other, but as a technical 13 leader in most things, they were very similar roles. 14 Q. Right. I think you tell us that neither team A nor 15 team B were site-based -- is that correct? 16 A. That's correct. 17 Q. You say, however, that the teams would be confined to 18 occasional site visits? 19 A. That's correct. 20 Q. As we know, you were, as it were, the most senior person 21 both in team A and team B, save for Mr Blackwood? 22 A. That's correct. 23 Q. I don't know whether you've had an opportunity of 24 looking at some of the evidence of Mr Buckland, who was 25 mentioned a short while ago, that's Mr Buckland of</p>



<p style="text-align: right;">Page 129</p> <p>1 Leighton, but he says this in his witness statement: 2 "Typically, the same group of people at Atkins acted 3 as MTR's DDC and also for Leighton." 4 And in another part of his statement he says: 5 "While MTR may have initially intended there to be 6 some separation between the two Atkins teams, MTR knew 7 there was no real separation and accepted this 8 position." 9 Dr McCrae, from paragraphs 16, 18 and 19 of your 10 witness statement, I understand that you don't subscribe 11 and agree with that view as expressed by Mr Buckland. 12 Am I right? 13 A. Yes, you are right. I don't agree fully with 14 Mr Buckland. 15 Q. How would you describe the separation between the two 16 teams? 17 A. We obviously strove to have as much separation and use 18 different people for different tasks. For example, if 19 you took the geotechnical team, that was totally 20 separate and because of the resources there, we did 21 endeavour to use team A resource with team B and 22 vice versa. 23 The structural work was a bit different in that 24 because of the large amount that developed, particularly 25 in 2015, we did use people on occasion to assist in both</p>	<p style="text-align: right;">Page 131</p> <p>1 in, but do you have any recollection of the email? 2 A. I don't have a recollection of the email. 3 Q. Was Mr Wilson team B? 4 A. Mr Wilson was the leader of -- the design leader of 5 team B, yes, that's correct. 6 Q. Okay. Could I just show you the report that is 7 attached. It starts at 23946. Do you see that? 8 A. I do. 9 Q. Thank you. We can see that it's described as 10 a "Diaphragm wall coupler check at NSL base and EWL roof 11 level -- area C (future panels)". It's prepared by "SR" 12 and checked by "ST". Do you know who "SR" and "ST" 13 were? 14 A. I don't, but I believe that they were engineers in the 15 Atkins Bangalore office who were doing work for us at 16 the time, but I don't know exactly who they were. 17 Q. Okay. Thank you very much. 18 If you go over to page 23948. Just looking at that 19 introductory page to the report, Dr McCrae, do you have 20 any recollection of seeing this report? Do you remember 21 it? 22 A. I don't remember it, no. I don't remember it. 23 Q. We can see that it appears to focus upon a short list of 24 particular panels; do you see that? 25 A. I do.</p>
<p style="text-align: right;">Page 130</p> <p>1 teams. This was made fully visible to both MTR and 2 Leighton when we were doing it, but it was a necessity 3 of the volume of work at the time and the most efficient 4 way and a collaborative way to undertake the works. 5 Q. Yes. That reflects, I think, Dr McCrae, evidence that 6 we have heard, that insofar as there was or emerged 7 a degree of lack of separation, it was because of the 8 increased amount of work so far as team B was concerned; 9 is that right? 10 A. Yes, that's correct. 11 Q. All right. 12 In paragraphs 24 to 32 of your witness statement, 13 you deal with what we describe and I think you describe 14 also as the missing U-bar issue and how it was resolved 15 and addressed. 16 A. Yes, that's correct. 17 Q. Could I please ask you to be shown a document at 18 F34/23939. 19 A. Yes, I see that document. 20 Q. The system is quicker me, Dr McCrae. 21 We there see an email of 28 February of David Wilson 22 of Atkins to Betty Ng of Leighton, attaching a design 23 report. I don't think, on the face of the email, you 24 were copied in, Dr McCrae, but do you have any 25 recollection of this email? I'm sorry, you were copied</p>	<p style="text-align: right;">Page 132</p> <p>1 Q. So far as the east diaphragm wall is concerned, it 2 focuses on, in particular, EH107 and EH105; do you see 3 that? 4 A. I do. 5 Q. In the third paragraph it says: 6 "However as the slab reinforcement has been made 7 continuous over the D-wall support without proper 8 anchorage into the D-wall for panel 107, it is proposed 9 to demolish the top portion of D-wall and add the 10 required number and diameter of rebar as per design 11 drawings and achieve the full anchorage length with the 12 D-wall vertical reinforcement. For details refer to 13 attached sketch." 14 Do you see that? 15 A. I do see that. 16 Q. There's a similar proposal in the next paragraph which 17 I won't read out in relation to EH105. 18 A. I see that as well. 19 Q. As I understand it, this was a proposal addressing the 20 problem that had arisen from the lack of anchorage 21 arising from the missing U-bar in respect of these two 22 particular panels. Do you agree? 23 A. That is what I understand to be being said there, yes. 24 It's a proposal of one option to address the problem of 25 the missing U-bar.</p>

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1 Q. Right. If you go to the sketches that are referred  
 2 to -- that's at page 23970 and 71; let's look at 70  
 3 first -- and one can see, on the extreme left-hand side  
 4 of this sketch, Dr McCrae, it says -- it's a bit  
 5 difficult to read it -- if we put it on its side -- we  
 6 might be able to rotate it for you -- but it says,  
 7 "D-wall concrete has to be demolished till the required  
 8 anchorage length"; do you see that?  
 9 A. I do.  
 10 Q. Similarly, if we go over the page to see the position on  
 11 EH105, the same words are used.  
 12 A. Yes, I see that.  
 13 Q. But on both of those sketches, would you agree -- it's  
 14 probably easier to see it from 23971 -- both proposals,  
 15 or rather both panels, it was anticipated that the  
 16 couplers would be retained?  
 17 A. I'm sorry, Mr Pennicott, could you repeat the last  
 18 sentence? I didn't catch it.  
 19 Q. Yes. Do you agree that both the sketches assume that  
 20 the couplers would be retained?  
 21 A. Yes, that does appear to be the case.  
 22 Q. Right. So what the proposal was, in relation to these  
 23 two particular panels, was the trimming down of the  
 24 concrete but the retention of the couplers?  
 25 A. Yes, couplers would still be used, that's correct.

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1 Q. Right. Now, in paragraph 51 of your witness  
 2 statement --  
 3 COMMISSIONER HANSFORD: Sorry, could we just go back to the  
 4 sketch for a second? Mr McCrae, the proposal here, as  
 5 I see, is to replace the top two bars that are shown in  
 6 black with the two bars that are shown in red; is that  
 7 correct?  
 8 A. That is correct, so the couplers on the EWL slab will  
 9 still be retained, but what this solution -- this is one  
 10 of the solutions that must have been discussed although  
 11 I don't recall it, it doesn't require you to put  
 12 anchorage into the OTE slab. All the anchorage can be  
 13 obtained in the diaphragm wall with this proposal.  
 14 COMMISSIONER HANSFORD: I understand that, Mr McCrae, and  
 15 I think we are probably coming to that at a later stage,  
 16 but I'm just coming back to whether the couplers are  
 17 still required, because the couplers are shown in black,  
 18 but the new work is the red that replaces the black,  
 19 isn't it?  
 20 A. I apologise. Yes. Those could be straight bars or  
 21 couplers. Actually, looking at the drawing I can't be  
 22 certain, because the couplers are still there, but  
 23 I can't be certain whether the couplers were to be  
 24 omitted or not, although they're still shown there.  
 25 COMMISSIONER HANSFORD: Can we just blow that up a little

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1 bit, that top detail.  
 2 MR PENNICOTT: Are you on 970, sir?  
 3 COMMISSIONER HANSFORD: Yes, the one on the screen, because  
 4 my reading of this --  
 5 MR PENNICOTT: 971.  
 6 COMMISSIONER HANSFORD: -- is that the top bars in black,  
 7 that's the top layer and the next layer down, the red  
 8 bars replace the ones that are shown in black, and it's  
 9 the ones in black that have couplers.  
 10 So I can't tell from this whether the couplers were  
 11 intended to be retained in the top two bars or not, and  
 12 I wondered what your interpretation of this sketch was.  
 13 A. I see exactly what you mean. Yes, that interpretation  
 14 could be correct. I'm sorry, I can't recollect what it  
 15 was at the time, but your interpretation could be  
 16 correct, yes. You could certainly interpret it that  
 17 way.  
 18 COMMISSIONER HANSFORD: Okay. Thank you.  
 19 MR PENNICOTT: Thank you, Dr McCrae.  
 20 In paragraph 51 of your witness statement, which is  
 21 the subject of one of the short corrigendum that you've  
 22 provided to us, you make reference to a report,  
 23 TWD-004B2, that was prepared by team B.  
 24 A. That's correct.  
 25 Q. We can find the report, I think, at J1, page 92. As you

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1 say in your statement -- we don't need to go to it; you  
 2 give us the reference, helpfully -- this was provided by  
 3 team B as a draft to Leighton on 14 May 2015.  
 4 A. Yes, that's correct.  
 5 Q. If you can please go to the next page, please, and the  
 6 next page -- thank you very much -- we see this is the  
 7 fourth issue of the document and you have approved it,  
 8 subject to the point that you make in your corrigendum?  
 9 A. That's correct. Am I able to explain what I meant by  
 10 ink signing?  
 11 Q. Yes, please. I was about to ask you.  
 12 A. The documents we prepared for all the various issues,  
 13 when they are formally issued to Leighton, that means  
 14 that we print the hard copies, we provide all the  
 15 ...(unclear words)... so it's final thing, the letter  
 16 changes from whatever it is, from an A to a B. So, for  
 17 example, where you see there "A2", if you went to the  
 18 document A2, you would see that that was wet signed.  
 19 That indicates that we have formally issued it; it's no  
 20 longer a document in development through discussion with  
 21 ourselves and Leighton.  
 22 So what I'm saying is B2, because we haven't wet  
 23 signed it, but I was aware of the document, obviously,  
 24 as you are aware from the email trail, we haven't wet  
 25 signed it, so we never formally issued it to Leighton.

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<p>1 Q. Okay. So you say, in careful wording in your statement, 2 it was provided as a draft? 3 A. Sorry, Mr Pennicott, I did not catch that. 4 Q. As you say in your statement, it was provided as 5 a draft? 6 A. That's correct, for discussion. 7 Q. Yes. All right. Without dwelling on it, if we go to 8 page 106, we see paragraph 1.3.5, which I'm not going to 9 go through with you, and then over the page we see the 10 figure 1.4 that we've looked at a number of times 11 before, and again we don't need to dwell on it at this 12 stage. 13 A. Yes, I see the figure. 14 COMMISSIONER HANSFORD: Sorry, once again, whilst we're not 15 dwelling on it -- do these top three layers have 16 couplers or not, Dr McCrae? 17 A. I don't believe they do as it's shown on here. 18 COMMISSIONER HANSFORD: Right. So is it therefore the same 19 point that we came to between us ten minutes ago, that 20 the red replaces the black, and the black is where the 21 couplers are? 22 A. At this time, this was obviously an option we were 23 looking at. I don't remember it in detail. But we 24 looked at a large number of options of how to manage 25 this anchorage problem because of missing U-bar, and</p>	<p>1 Q. And the hatched area appears to cover the slab -- sorry, 2 the OTE wall, the top of the diaphragm wall and the 3 slab; do you see that? 4 A. I do. 5 Q. Do you agree with that? 6 A. If this option, as I interpret it, and I think you have 7 as well, to be through-bars, you would have had to do it 8 that way. 9 Q. Right. So, if I've understood your evidence, then what 10 this is showing is trimming down of the concrete and the 11 diaphragm wall, through-bars, and the provision of 12 anchorage at the OTE, and concurrent concreting? 13 A. That is an interpretation, I think that was possibly 14 an option that was being discussed at that time, yes. 15 Q. Dr McCrae, what does the word "concurrently" mean in 16 this context? 17 A. My interpretation is it means that the pour for the EWL 18 slab, that small section of diaphragm wall which 19 contains the through-bars -- and I'm interpreting them 20 as through-bars -- and the OTE should be all poured at 21 the same time. 22 Q. Right. In effect, poured all in one piece? 23 A. Yes. In this case, yes. 24 Q. All right. 25 Now, after you provided that draft report on 14 May,</p>
<p>Page 138</p> <p>1 this must have been one of the options that was around 2 at that time, yes. 3 COMMISSIONER HANSFORD: But it doesn't specifically state, 4 or does it -- it doesn't specifically state that there 5 are couplers? 6 A. It doesn't specifically state there are couplers there, 7 that's correct. 8 COMMISSIONER HANSFORD: Okay. Thank you. 9 MR PENNICOTT: What it does show, I think, Dr McCrae, is the 10 red lines going from the EWL slab to the OTE slab, and 11 those bars bending upwards? 12 A. Yes. So unlike the previous one you've showed me, 13 Mr Pennicott, this one does show that -- this is 14 an option to look at anchorage into the OTE slab rather 15 than provide the anchorage just to the diaphragm wall. 16 Q. Yes, and this was a slightly alternative proposal to 17 provide the anchorage that was lost as a result of the 18 missing U-bars? 19 A. That's correct. As I said, we looked at quite a number 20 of options at the time as to how to achieve that. 21 Q. Yes. With a degree of hesitation, if you look at the 22 annotation underneath the brownish shaded area, it says, 23 "OTE and EWL slab to be concreted concurrently"; do you 24 see that? 25 A. I do.</p>	<p>Page 140</p> <p>1 there was a series of emails. Could we please go to, 2 first of all, J2/1669. 3 A. It's on my screen. 4 Q. Thank you. 5 Now, the first email is 22 May, from Leighton to 6 Edward Tse, who I understand was Atkins B, although 7 I think he also had a role in Atkins A. What is said 8 is: 9 "As spoke, I disagree we put the 'missing U-bar' 10 remedial in our ELS submission ..." 11 And that is a reference to the draft report that we 12 were looking at a short while ago; do you agree? 13 A. Yes. Yes, I agree. 14 Q. Right. 15 "... as BD do not know about this 'formally' and MTR 16 will reflect the changes in the coming DDC amendment 17 submission. 18 Also the design changes are different from the 19 endorsed TWD-025C and DDC amendment submission. 20 TWD-004B -- again, we only need to demonstrate to BD 21 the minimum stiffness is used to match TWD-025C and the 22 DDC amendment submission. 23 Understand you will speak to Kevin Yip on the 24 submission strategy, please give us a feedback 25 afterwards."</p>

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<p>1 And you were copied in on that email, Dr McCrae? 2 A. Yes, I was. 3 Q. Then if we could go to 1668, on the following day, on 4 the 23rd, it's the one in the middle of the page, from 5 Betty Ng of Leighton to Edward Tse and to you: 6 "Edward, Rob, 7 Further to the discussion with Kevin yesterday 8 evening, for the initial excavation down to minus 9 0.5mPD, confirmed that we are not going to submit 10 TWD-004B to BD for not to confuse BD and complicate the 11 issue. 12 As we only need BD's approval to start the initial 13 bulk excavation and the D-walls have not been loaded in 14 the initial stage, we will submit TWD-381 (open-cut 15 situation ...) to include assessment to the D-wall 16 checking up to minus 0.5mPD." 17 Do you see that? 18 A. I do. 19 Q. If we then go to 1667, at the bottom of the page, on 20 27 May, Mr Tse writes back to Leighton saying: 21 "I have spoken to him and the approach is the same 22 as you said. But I will confirm with him if I put the 23 remedial proposal in the DDC submission, I need 24 a formally instruction from MTR. 25 Regarding the contractor slab submission, I will</p>	<p>1 scheme and eventually it was finalised in PWD-59. 2 So my belief is that we wanted to keep that detail 3 of PWD-59 and not put it in TWD-004, so it's very clear 4 which document held the detail and there was no 5 confusion. 6 Q. Right. Can we then look at paragraphs 58 and 59 of your 7 witness statement, where you refer to the other report, 8 the permanent works design report, that was in the 9 course of preparation from the beginning of June to the 10 final report of 9 July; do you see that? 11 A. I do see that. 12 Q. Just to get confirmation of the date, can we just look 13 at C29/21765. 14 If we can go on two pages to 67, please. So this is 15 the PWD report, dated, as you say, 9 July 2015, albeit 16 not submitted to BD until the end of July? 17 A. Yes, that is the formal copy that we sent to Leighton 18 because we -- myself and WC Lee, in this case, have wet 19 signed it. 20 Q. All right. If we look at this report -- on the final 21 two pages can we find the conclusion, please -- 22 We'll move on. There's another point coming in 23 a moment, Dr McCrae. 24 After the TWD report had been prepared back in June, 25 this report, we've seen, was 9 July. There was still</p>
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<p>1 take out section 1.3.6 about additional bottom rebar and 2 also the whole RC drawings for both part I and part II. 3 Report will be updated by today." 4 Do you see that, Dr McCrae? 5 A. I do see that, sorry, yes. 6 Q. We then go to paragraph 56 of your witness statement, 7 where you say: 8 "On 17 June 2015, team B submitted [for short] 9 TWD-004B3 ..." 10 A. I see that, yes. 11 Q. We can look at it, if we need to, Dr McCrae, but I think 12 you know as well as we do that in that submission, 13 paragraph 1.3.5 and figure 1.4 that we were looking at 14 a moment ago in the previous report, were omitted. 15 A. Yes. 16 Q. In your witness statement, you say: 17 "I do not know the exact reason for this." 18 Having looked at those emails, does that shed any 19 light on the reasons for the omission of the paragraph 20 and the figure? 21 A. Well, we were going through our series of options, as 22 I said before, to develop the anchorage, and what we 23 wanted to do was not confuse matters, so the anchorage, 24 which is part of the permanent works, was going to be 25 dealt with in a different document. It was a developing</p>	<p>1 further discussion, as I understand it, about the 2 anchorage solution; is that right? 3 A. Yes, I believe that is the case. 4 Q. If we look in your witness statement at paragraph 60, 5 you refer to certain of those emails, and in particular 6 the email at B10/7515. 7 So that's the first one on 21 July; do you see that, 8 Dr McCrae? 9 A. I do. 10 Q. The one I think referred to in your witness statement -- 11 perhaps not. This is Mr Daynes writing to you. 12 A. I think it's WC Lee writing to Mr Daynes, isn't it? 13 Q. I beg your pardon, it's WC Lee writing to Mr Daynes, 14 copying you in; do you see that? 15 A. That's right, yes. 16 Q. And he says: 17 "Attached revised rebar arrangement to compensate 18 the missing U-bars for the D-wall connection along the 19 east side ..." 20 Then the gridlines are mentioned. 21 "The details incorporated comments from both BD and 22 MTR/DC teams ..." 23 Do you see that? 24 A. I do. 25 Q. Then if you could please go to B10/7255. This is the</p>

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<p>1 email from yourself this time to Brendan Reilly at MTR, 2 copied to various people at Atkins, and you refer to 3 this in paragraph 62 of your witness statement. 4 What you say is this: 5 "[Dear] Brendan, 6 Following your discussion with CK Chan (RSE) on 7 whether it is necessary to cast the EWL slab and OTE 8 monolithically I confirm his conversation." 9 Were you party to the conversation, Dr McCrae? 10 A. Yes, I was in the room when the conversation was held. 11 It was a telephone conversation, and I was sitting with 12 Mr Chan when he was on the telephone to Brendan. 13 Q. You go on to say: 14 "That is in the BD letter of 4 December 2014 they 15 stated in comment A3 that construction joint should be 16 cast in accordance with PNAP APP-68." 17 Is that a document that you're familiar with, 18 Dr McCrae? 19 A. I'm not familiar with it. I'm aware of it and I have 20 looked at it in the past few weeks, but I wouldn't say 21 I'm familiar with it. 22 Q. Right. You obviously knew about it when you wrote this 23 email? 24 A. I was aware of it but the full connotation of it, 25 I couldn't say -- I wasn't that familiar with it.</p>	<p>1 A. On 24 July, which was a Friday, Mr Reilly asked me late 2 on the Friday to attend the MTR site offices. The issue 3 was that they wanted to make the pour which I believe is 4 called C1-1, which was the first pour in areas B and C, 5 and they wished to make this pour because there was 6 an urgency -- I believe there was a milestone or 7 something they wanted to make. 8 However, at that time, although the EWL area was 9 ready to place steel and concrete, the OTE wasn't, so 10 they couldn't fulfil the requirement of casting them 11 both at the same time. 12 Mr Reilly had three points he made to me. One was: 13 were all the permissions in place to allow the pour to 14 go ahead? The second one was: could they omit the 15 upstand or the kicker on the OTE? And the third point: 16 was it necessary to pour the OTE at the same time as the 17 EWL or could they be poured -- a suggestion had been 18 made by Leighton to delay the OTE pour on the basis that 19 no loading would occur to the EWL slab requiring the 20 anchorage to be needed, and the OTE slab would be poured 21 in time before that anchorage was needed. 22 So they were the three points that Mr Reilly made to 23 me on that Friday afternoon/evening. He asked me to 24 deal with that as a matter of urgency, and I took that 25 to mean the next working day, which was the Monday. He,</p>
<p>Page 146</p> <p>1 Q. All right. You go on to say: 2 "Within this document clause 2(a) does state that 3 the structure should be cast monolithically unless 4 unavoidable; in which case an alternative construction 5 detail must be submitted prior to approval. The concern 6 in the PNAP is about water ingress at the joint. 7 Therefore a detail showing the waterproofing has been 8 submitted and discussed with BD showing waterproofing 9 including provision of a hydrophilic strip. This detail 10 is understood to be accepted by BD." 11 Then you say this: 12 "Therefore the RSE view is that it is acceptable to 13 cast the OTE slab after the EWL slab providing it is 14 cast before future activities which would further load 15 the structure, in particular dewatering or excavation 16 below the EWL slab." 17 Dr McCrae, can you explain that sentence, please? 18 A. Yes. Reading this now, I realise that I have conflated 19 two ideas in that email, and that wasn't my intention. 20 There are two separate points there which we were aware 21 of at the time. 22 In explaining this, could I turn to 24 July and 23 explain what happened on 24 July that then led to this 24 email? 25 Q. Please do, Mr McCrae, yes.</p>	<p>Page 148</p> <p>1 however, took it to mean the Saturday; that he wished it 2 dealt with on the Saturday. 3 Is that clear so far, Mr Pennicott, before I go on? 4 Q. It is, but can you just give me one moment. Yes, okay. 5 Carry on. 6 A. So, of the three issues that I just mentioned -- if 7 I take the OTE kicker, first of all, or upstand wall -- 8 both Atkins and I believe MTR would not accept that it 9 was essential that that upstand wall was cast as part of 10 the OTE. So that part didn't take -- wasn't part of the 11 discussion, as far as I remember, on the Saturday. 12 What happened on the Saturday -- and this is 13 an aside, but why I remember it so well -- I had 14 promised to go shopping with my wife and then go for 15 lunch with her in TST. When I got off the train in TST 16 at about 10 o'clock, I realised there were quite 17 a number of missed calls from Mr Reilly on my phone. 18 Mr Reilly insisted that I had made an agreement to deal 19 with it that Saturday and I should deal with it 20 immediately. So I had to abandon my wife at that time 21 and it was a recurring problem with her for many months 22 afterwards. That is why my memory is good, if I could 23 say so. 24 I then went -- this must have been about 10 o'clock 25 that Saturday morning -- to the Atkins office, which you</p>

<p style="text-align: right;">Page 149</p> <p>1 may know is quite close to TST Station, and Mr Chan was 2 there, CK was there. So I discussed the problem with 3 CK, and, as you may know, CK was the head of the 4 structural department of Atkins at that time and 5 somebody I would seek advice from on structural matters. 6 He was also very well aware of BD problems. 7 So, to take the first problem, which was were the 8 approvals in place, so Mr Chan -- CK knew that the 9 matters raised in the BD letter, around APP-68, had been 10 discussed with BD and had been dealt with. 11 The second point, which is whether you could pour 12 the EWL slab because there's an urgency to do that to 13 meet some requirement; and then four was the OTE slab. 14 CK -- I must admit that I did agree with him as well -- 15 would accept in this one case, and only in this one 16 case, because they could avoid loading the EWL slab 17 ...(unclear words)... the OTE slab, cast slightly later 18 in time ...(unclear words) -- 19 MR PENNICOTT: Can you pause, please, Dr McCrae. 20 CHAIRMAN: The sound has gone problematic. 21 A. I apologise. I will try to speak slower. 22 CHAIRMAN: Thank you. 23 MR PENNICOTT: Yes, please, just a bit more slowly. 24 A. Where do you wish me to start again; by describing the 25 nature of the pours?</p>	<p style="text-align: right;">Page 151</p> <p>1 down, there were couplers retained in that area, because 2 it was the first area to be poured, and indeed this must 3 have been sorted out over that weekend because the 4 Monday would have been 27 July, and we know that the 5 concrete was poured in that area on the 28th? 6 A. That's my understanding, yes. 7 Q. Right. Dr McCrae, as you said, and that's been 8 extremely helpful -- I think we now understand at last 9 what this email is all about -- this was referable to 10 C1-1. Did it have any relevance to the remaining areas 11 or not, or is your view that this was very much confined 12 to this particular area, for the particular reasons that 13 you've given? 14 A. Yes. We wanted the pours to ensure that we could obtain 15 the monolithic behaviour we wanted, we wanted both the 16 pours to happen at the same time. That was 17 a requirement to get the monolithic behaviour, but we 18 allowed them one exception, and one exception only, and 19 that was for this pour. 20 Q. Right. And this had nothing to do with trimming down, 21 nothing to do with through-bars; this was an area where 22 couplers were retained, as we know? 23 A. That was our understanding. Yes, that is the case. 24 Q. Okay. 25 Sorry, sir, can I just have a moment, because</p>
<p style="text-align: right;">Page 150</p> <p>1 Q. Let's start from the second point, which is whether you 2 could pour the EWL slab because there's an urgency to do 3 that to meet some requirement. Pick it up from there. 4 A. Yes. So there's an urgency to meet this requirement. 5 I can't remember exactly what it is. So the point was 6 that providing the anchorage didn't come into play, in 7 other words the EWL slab didn't rely on the anchorage, 8 we could delay slightly the pour of the OTE slab while 9 Leighton got that area ready and constructed it, and it 10 was these conditions. And the things that would cause 11 the loading were dewatering or the excavation. So 12 providing they did not happen, in this one and only in 13 this one case, we could allow that sequence of pouring 14 to happen. 15 CK also said, of course, that it would be the 16 decision of the competent person at the end, so the 17 matter should be referred to Jason Wong. 18 Q. Right. 19 A. So I accept I have conflated two points in that answer, 20 but there are two separate points there. 21 Q. Right. Just so that we've got it clear, this email and 22 the situation that had arisen was specifically referable 23 to area C1-1? 24 A. To that single pour which I believe is called C1-1, yes. 25 Q. And that's an area where we know there was no trimming</p>	<p style="text-align: right;">Page 152</p> <p>1 I think that explanation has made a number of other 2 questions redundant. 3 CHAIRMAN: Doctor, just bear with us for a moment or two. 4 WITNESS: Of course. 5 MR PENNICOTT: I would just like, Dr McCrae, to go back to 6 the PWD, the permanent works design, report that we 7 touched on a moment ago. Could we go, if we've got B10, 8 to B10/7324. Sorry, 7322, to just see the letter 9 submitting the document. 10 Dr McCrae, you can see it's a letter of 30 July 11 2015, from the MTR to the Buildings Department, 12 submitting, as we will see, the PWD-059A3 report; do you 13 see that? 14 A. I do see that, yes. 15 Q. The report starts at 7324. 16 A. Yes, I see that. 17 Q. Its primary purpose was, as we know, to address the 18 issues that had arisen regarding the change and the 19 missing U-bars, and so forth? 20 A. Yes, that's my understanding. 21 Q. If you could go, please, to page 7333, towards the 22 bottom of the page we see a heading, "Modification of 23 rebar connection slab/D-wall"; do you see that? 24 A. Yes. 25 Q. What it says there is:</p>

<p style="text-align: right;">Page 153</p> <p>1 "To provide the full tension anchorage for the slab 2 rebar, the rebar are extended into the OTE slab/wall 3 with full tension anchorage lap length, [at] end of the 4 bar with a standard bend-up hook as recommended in the 5 Concrete Code -- 2013. To comply with this principle, 6 the OTE slab/wall must be concrete 7 monolithically/concurrently (ie at the same time) with 8 the 3 metre EWL slab and provide adequate lap length 9 details for future OTE wall construction, detail refer 10 to appendix F of this report." 11 Now, in the context of this report, Dr McCrae, what 12 was meant by "the OTE slab/wall must be concrete 13 monolithically/concurrently with the 3 metre EWL slab"? 14 A. So what we wanted to do was to ensure that all parts 15 acted together, so acted monolithically, so we had 16 a monolithic behaviour ... (unclear words). 17 CHAIRMAN: Sorry, bear with us just a minute. 18 MR PENNICOTT: Sorry, Dr McCrae, the sound has dropped off 19 again. 20 CHAIRMAN: If we could start off again, Doctor, please, with 21 what you wanted to do was to ensure that all parts acted 22 together, I think. 23 A. That is correct, sir, yes. We wanted all parts to act 24 together in a monolithic behaviour. In order to ensure 25 that happened, we needed the EWL slab and the OTE slab</p>	<p style="text-align: right;">Page 155</p> <p>1 one was cast later -- in this case it's the OTE was cast 2 later -- the monolithic behaviour might occur because 3 the OTE is not there, is not in place, and we would lose 4 the anchorage we are getting. So by casting them at the 5 same time, we are assure that everything is in place 6 monolithically, joined together, for when the behaviour 7 is needed. 8 Q. All right. 9 COMMISSIONER HANSFORD: Sorry, just so I can understand that 10 further, Dr McCrae. So you are saying "monolithic" is 11 a reference to the behaviour, the structural behaviour 12 of the finished structure, as opposed to it being 13 necessarily cast in one piece? Is that what you are 14 saying? 15 A. Yes, I'm saying it's not cast in one piece. It's joined 16 together. But the time factor is that we wished both 17 the EWL section and the OTE section to be cast at the 18 same time. 19 COMMISSIONER HANSFORD: Yes. I understand the time part, 20 and hence it being cast concurrently, and I understand 21 the reason for that. But the use of the term 22 "monolithic" is a reference to the structural behaviour 23 and it acting monolithically; is that correct? 24 A. That was my understanding at the time and it's still my 25 understanding now.</p>
<p style="text-align: right;">Page 154</p> <p>1 to be concreted at the same time. 2 If that didn't happen, we had concern -- and we knew 3 the EWL slab would always be concreted first -- we had 4 a concern that if the OTE slab was cast at a later date, 5 by the time the OTE slab was required, the EWL slab may 6 have already begun to load and cause the anchorage. So 7 the time part of the monolithic is to ensure that 8 they're both in place when they are required to act. 9 MR PENNICOTT: I think, Dr McCrae, one of the problems that 10 some of us, particularly me, are struggling with is if 11 you've got the EWL slab, as it were -- we call 12 number 1 -- 13 A. Yes. 14 Q. -- and we've got the OTE wall that we call number 3, and 15 we got the diaphragm wall in the middle, number 2 -- if 16 you're not going to do anything, not going to trim down, 17 alter, in any way touch the diaphragm wall, how does 18 concreting 1 and 3 amount to a monolithic exercise? 19 A. If I could go through that. You create it monolithic by 20 joining the steel from the EWL to the couplers of the 21 diaphragm wall, which then go through to the couplers 22 which join to the OTE structure. So the three are 23 joined together, so it is one part but joined together, 24 and that is what causes the monolithic behaviour. 25 Why they need to be cast at the same time is that if</p>	<p style="text-align: right;">Page 156</p> <p>1 COMMISSIONER HANSFORD: Okay. That's helpful. Thank you. 2 MR PENNICOTT: Dr McCrae, just to test that proposition 3 a little bit further, could we just look at the final 4 version of the TWD report that we touched on earlier, 5 that's the 004B3 document, which we will find at 7262. 6 That's the 17 June document. This is the final version, 7 Dr McCrae. 8 If you could go to 7312, the highlighted sentences 9 are sentences that we've looked at innumerable times, it 10 appears. And I'm sure that you've read those words that 11 are highlighted there yourself, Dr McCrae. 12 A. I have done, yes. 13 Q. This is a report that you approved, albeit in the 14 circumstances that you described earlier. How do you 15 reconcile what you've just told us with the words that 16 we see here, in particular the first sentence in the 17 yellow highlight, "The top of diaphragm wall panel will 18 be trimmed to the lowest level of top rebar for the EWL 19 slab (minimum 420 millimetres below the top level of EWL 20 slab)"? 21 A. Can I first make a very slight correction, Mr Pennicott. 22 I'm not trying to avoid the issue by any means. 23 Although it is my initials on this report, they were 24 actually signed by a delegate. I'm not trying to 25 absolve myself of any responsibility, but just for the</p>

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<p>1 correctness it was my delegate who actually signed this.</p> <p>2 Q. Right.</p> <p>3 A. But to move now to the point, I don't know why that was</p> <p>4 there. Clearly, what we required was a PWD-59. With</p> <p>5 hindsight, that should have been omitted. I can't</p> <p>6 understand why it was there. But it is the document</p> <p>7 PWD-59 and the working drawings that accompanied that</p> <p>8 which were what was issued for construction.</p> <p>9 Q. Right. I hear your explanation. The short point is</p> <p>10 that they are irreconcilable, really, aren't they,</p> <p>11 Dr McCrae? You can't reconcile the two positions in the</p> <p>12 two reports, taking the words at face value?</p> <p>13 A. Absolutely. But PWD-59 is the document with the</p> <p>14 drawings for construction in it, so in my view, that has</p> <p>15 precedence over this statement.</p> <p>16 Q. Okay.</p> <p>17 CHAIRMAN: Doctor, could I just ask you, is that because</p> <p>18 drawings in the profession, completed drawings/designs,</p> <p>19 will always have precedence over any statement of the</p> <p>20 kind that you're looking at now?</p> <p>21 A. Yes, sir. In my experience, the drawings are what the</p> <p>22 site needs for construction, so they have precedence.</p> <p>23 There obviously may be occasions where the site</p> <p>24 recognised there may be contradictions from some other</p> <p>25 information that they have. In that case, what they</p>	<p>1 on the left-hand side -- where the hand is, if you can</p> <p>2 blow that up, please; that's fine, thank you -- it says</p> <p>3 here, you will see, on the section -- it relates to the</p> <p>4 diaphragm wall connection east side, EH45 to EH109, and</p> <p>5 then the words at top-right on the section, "Section of</p> <p>6 OTE wall concrete cast together with (at the same time</p> <p>7 as) EWL slab".</p> <p>8 Do you give that the same meaning as you do in the</p> <p>9 PWD report that we've just looked at?</p> <p>10 A. Yes.</p> <p>11 Q. Dr McCrae, were you aware at any time during your</p> <p>12 carrying out your duties and responsibilities in</p> <p>13 relation to team A and/or team B of the trimming down of</p> <p>14 the east diaphragm wall for the purposes of putting or</p> <p>15 substituting through-bars for the coupler design?</p> <p>16 A. There was one TQ for one particular panel where it was</p> <p>17 asked, but only that one particular case in one</p> <p>18 particular panel was my only recollection.</p> <p>19 Q. That's TQ34, is it, Dr McCrae?</p> <p>20 A. Yes, I believe it's TQ34.</p> <p>21 MR PENNICOTT: Right. Okay. Thank you very much,</p> <p>22 Dr McCrae. I have no further questions. Thank you.</p> <p>23 CHAIRMAN: Leightons?</p> <p>24 MR SHIEH: No questions.</p> <p>25 MR TO: No questions from China Technology.</p>
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<p>1 should do is raise an RFI, a request for information, to</p> <p>2 get it clarified. But in my view the drawings always</p> <p>3 have precedence.</p> <p>4 CHAIRMAN: Thank you.</p> <p>5 MR PENNICOTT: Dr McCrae, would I be right in saying that</p> <p>6 your explanation -- or support is lent to your</p> <p>7 explanation, if you go to page B7277, which is</p> <p>8 paragraph 1.3.5 of this report, where, in the second</p> <p>9 sentence under 1.3.5, it says:</p> <p>10 "The justification of reinforced concrete design for</p> <p>11 the as-built reinforcement detail at the interface</p> <p>12 between the diaphragm wall and the EWL slab between</p> <p>13 gridlines 22 to 40 because of the missing U-bar in</p> <p>14 diaphragm wall can refer to report no. PWD-59A1</p> <p>15 submitted by the contract."</p> <p>16 A. Yes, I would agree with that.</p> <p>17 Q. Could I ask you, please, to be shown -- I think we're</p> <p>18 still in the same file, B10 -- 7360.</p> <p>19 Do you remember, Dr McCrae, a design amendment known</p> <p>20 as DAmS 310?</p> <p>21 A. Yes, I'm aware of that, yes.</p> <p>22 Q. If we could go, please, to 7428, there are a couple of</p> <p>23 drawings that are included -- a number of drawings that</p> <p>24 are included within DAmS 310, and if you could look at,</p> <p>25 on the left-hand side, please, the typical detail right</p>	<p>1 CHAIRMAN: MTR?</p> <p>2 MR BOULDING: No questions, sir.</p> <p>3 CHAIRMAN: Government?</p> <p>4 MR CHOW: No questions from government.</p> <p>5 CHAIRMAN: Thank you.</p> <p>6 Peter, any more questions?</p> <p>7 COMMISSIONER HANSFORD: Nothing else from me.</p> <p>8 Re-examination by MR CONNOR</p> <p>9 MR CONNOR: Thank you.</p> <p>10 Dr McCrae, just very briefly, if I may. Vincent</p> <p>11 Connor returning on behalf of Atkins. You answered some</p> <p>12 questions of course from Mr Pennicott a moment ago with</p> <p>13 reference to PWD-59, as you will recall. If you might</p> <p>14 have that back in front of you again. That's at B7322.</p> <p>15 I think that is the letter or appears to be a letter</p> <p>16 from MTR submitting that report to the Buildings</p> <p>17 Department. Do you see that?</p> <p>18 A. I do see that, yes.</p> <p>19 Q. Thank you. I think you looked at this just a moment</p> <p>20 ago.</p> <p>21 In response to questions from Mr Pennicott and from</p> <p>22 the professor, you were explaining your position and</p> <p>23 understanding regarding the design requirement of</p> <p>24 achieving monolithic behaviour of the slabs with the</p> <p>25 diaphragm wall in their completed state. Do you recall?</p>



<p style="text-align: right;">Page 161</p> <p>1 A. Yes.</p> <p>2 Q. Thank you. Just for the sake of completeness, if you</p> <p>3 turn to page B7331, in case this helps at all, this is</p> <p>4 a section 2 that begins -- sorry, B7331, and if you go</p> <p>5 to the top of the page, please; thank you -- there is</p> <p>6 a paragraph that begins "Design evaluation of the</p> <p>7 as-built connection detail", and appreciating this is</p> <p>8 a section dealing with the connection detail in</p> <p>9 particular, but it reads as follows:</p> <p>10 "Although the diaphragm wall steel terminates at the</p> <p>11 top of the diaphragm wall without a lap it is difficult</p> <p>12 to envisage a realistic failure mode. The reason for</p> <p>13 this is because the slab is so stiff that it will behave</p> <p>14 monolithically with the wall so that any rotation would</p> <p>15 create a horizontal crack in the diaphragm wall at the</p> <p>16 soffit level ..."</p> <p>17 Please let us know if it assists at all: is this</p> <p>18 passage we are reading from here also reflective of the</p> <p>19 design intent that the slabs and the diaphragm wall, in</p> <p>20 their completed state, would behave monolithically?</p> <p>21 A. Yes, that's correct. It goes on to further things but,</p> <p>22 yes, that is correct.</p> <p>23 Q. Thank you. While we are on this document, there is --</p> <p>24 I think, if you move through the document on to</p> <p>25 page B7333, you will see towards the end of that page</p>	<p style="text-align: right;">Page 163</p> <p>1 particular then the detail begins on pages 7356 and</p> <p>2 7357.</p> <p>3 Do you see that?</p> <p>4 A. I do, yes.</p> <p>5 Q. Is there anything in appendix F which helps us</p> <p>6 understand whether or not there is any change to the</p> <p>7 connection details proposed in PWD-59 from the coupler</p> <p>8 arrangement?</p> <p>9 A. I think it's in line with the coupler arrangement, as</p> <p>10 described in PWD-59.</p> <p>11 Q. Thank you. So, really to draw your evidence together,</p> <p>12 if I may attempt, Dr McCrae, in terms of your</p> <p>13 involvement in the project, it would seem that the only</p> <p>14 awareness you had of a D-wall trimming arose from</p> <p>15 a proposal, amongst others, which was being considered</p> <p>16 around about February 2015, in what we refer as to</p> <p>17 B10/7322, namely TWD-025C1?</p> <p>18 A. Yes, correct.</p> <p>19 Q. And in addition, as you told Mr Pennicott a moment ago,</p> <p>20 that trimming down which arose as a result of TQ34?</p> <p>21 A. And the proposal in TQ34, yes, that's correct.</p> <p>22 Q. And with the exception of the email enquiry that we</p> <p>23 spent some time looking at at the end of July 2015,</p> <p>24 around about the time of the disturbed lunch</p> <p>25 arrangement, if you recall --</p>
<p style="text-align: right;">Page 162</p> <p>1 a short paragraph beginning, "Modification of rebar</p> <p>2 connection slab/D-wall", and the paragraph begins:</p> <p>3 "To provide the full tension anchorage for the slab</p> <p>4 rebar, the rebar are extended into the OTE slab/wall</p> <p>5 with full tension anchorage lap length, end of the bar</p> <p>6 with a standard bend-up hook as recommend the in the</p> <p>7 Concrete Code -- 2013."</p> <p>8 Then it goes on:</p> <p>9 "To comply with this principle, the OTE slab/wall</p> <p>10 must be concrete monolithically/concurrently (ie at the</p> <p>11 same time) with the 3 metre EWL slab and provide</p> <p>12 adequate lap length details for future OTE wall</p> <p>13 construction ...", with a reference to appendix F.</p> <p>14 Do you see that?</p> <p>15 A. I see that.</p> <p>16 Q. Thank you. Is that, in your evidence, also consistent</p> <p>17 with your reading of the formation of the slabs at the</p> <p>18 same time or concurrently, with a view to achieving</p> <p>19 monolithic behaviour of the end product?</p> <p>20 A. Yes, that is in line with my understanding, yes.</p> <p>21 Q. Thank you. Just to conclude that, there is a short</p> <p>22 reference at the end of that paragraph I've just helped</p> <p>23 you through to appendix F, that's F for frank, and if we</p> <p>24 turn to that appendix, please, which we will find, if</p> <p>25 you bear with me, please, at page B7355, and in</p>	<p style="text-align: right;">Page 164</p> <p>1 A. I do recall.</p> <p>2 Q. -- and perhaps still paying for.</p> <p>3 A. Absolutely.</p> <p>4 Q. With the exception of that, Dr McCrae, which appeared to</p> <p>5 relate to EM72 and EH74, are you aware of any query</p> <p>6 being raised with Atkins in relation to the requirement</p> <p>7 to pour the slabs concurrently, ie at the same time?</p> <p>8 A. No, that's the only recollection I have.</p> <p>9 Q. Finally, you recall Mr Pennicott taking you, for the</p> <p>10 sake of completeness, to the DAmS 310 submissions in</p> <p>11 August of 2015, as submitted later that year. At that</p> <p>12 time, as far as the knowledge being conveyed to you is</p> <p>13 concerned, you were still looking at a configuration of</p> <p>14 the D-wall that did not involve trimming down, other</p> <p>15 than that which you have described to us, nor the use of</p> <p>16 through-bars, save for the evidence you have given; is</p> <p>17 that so?</p> <p>18 A. That's correct.</p> <p>19 MR CONNOR: Thank you very much, Dr McCrae. Subject to any</p> <p>20 final questions from the Chairman or the professor,</p> <p>21 I have no further questions for you, but I will hand you</p> <p>22 back to them.</p> <p>23 COMMISSIONER HANSFORD: Nothing else from me.</p> <p>24 CHAIRMAN: Thank you very much indeed, Doctor. It's been</p> <p>25 very good of you.</p>

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1 WITNESS: Thank you.  
 2 CHAIRMAN: I dread to think what time you had to get up to  
 3 present yourself, but thank you. We're obliged, and  
 4 your evidence is now completed.  
 5 WITNESS: Thank you very much.  
 6 MR CONNOR: Thank you. Thank you, Professor. Thank you,  
 7 Dr McCrae.  
 8 (The witness was released)  
 9 That concludes such evidence from Atkins as we have  
 10 available today, and with that I pass you back to  
 11 Mr Pennicott.  
 12 MR PENNICOTT: Sir, our next Atkins witness due to be called  
 13 first thing tomorrow morning is Mr Chan Chi Kong.  
 14 However, I don't believe that the Commission will have  
 15 any questions for him, in the light of the evidence we  
 16 have just heard from Dr McCrae. So unless there's  
 17 anybody behind me who thinks that it is vital or indeed  
 18 necessary to call Mr Chan Chi Kong, I would propose that  
 19 he need not be called. I know he has just come back  
 20 from holiday today and was no doubt looking forward to  
 21 coming here tomorrow. So if everybody else is content  
 22 that he need not be called, then his witness  
 23 statement --  
 24 CHAIRMAN: Let me just avoid any ambiguity here.  
 25 MR PENNICOTT: Yes.

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1 CHAIRMAN: Leightons, would you wish him to be called?  
 2 MR PENNICOTT: It may be that other people need a bit of  
 3 time to think about it, in which event I understand  
 4 that.  
 5 CHAIRMAN: But at this moment in time, is there anybody who  
 6 feels that they definitely would like to --  
 7 MR SHIEH: Not for us. At the moment, not for us.  
 8 CHAIRMAN: Thank you very much. We will work on the basis,  
 9 then, that he will not be called, but should anybody,  
 10 any party, on reflection, wish to call him, then  
 11 obviously arrangements will be made.  
 12 MR PENNICOTT: Yes, sir. Thank you very much.  
 13 MR CONNOR: Thank you very much, sir. I very much  
 14 appreciate Mr Pennicott raising that matter.  
 15 Mr Chan is back from holiday. He is ready to give  
 16 evidence if that is required. It may be something that,  
 17 if convenient, we might revisit tomorrow so that we  
 18 might let him know one way or the other. But, as  
 19 matters stand, I will not require his attendance at  
 20 10 am tomorrow morning.  
 21 CHAIRMAN: No, that's correct.  
 22 MR PENNICOTT: That's fine.  
 23 CHAIRMAN: Thank you.  
 24 MR PENNICOTT: In which event, sir, if I'm reading the  
 25 timetable correctly, the next witness will in fact with

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1 Mr Kevin Harman from Leightons, and then we will after  
 2 that return to the government witnesses.  
 3 CHAIRMAN: Good. Thank you very much indeed. We have  
 4 finished not too bad, actually.  
 5 MR PENNICOTT: Better than I anticipated.  
 6 CHAIRMAN: Yes. Excellent. Thank you very much indeed.  
 7 Tomorrow morning, 10 am. Thank you.  
 8 MR PENNICOTT: Thank you.  
 9 (5.48 pm)  
 10 (The hearing adjourned until 10.00 am the following day)  
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