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<p>1 Friday, 14 June 2019</p> <p>2 (10.02 am)</p> <p>3 MR CHAN KIT LAM, KIT (on former affirmation)</p> <p>4 Examination by MR PENNICOTT (continued)</p> <p>5 MR PENNICOTT: Sir, good morning. Professor, good morning.</p> <p>6 Mr Chan, good morning.</p> <p>7 A. Good morning.</p> <p>8 Q. I just have four areas I want to cover with you, two</p> <p>9 that we touched upon yesterday.</p> <p>10 A. Yes.</p> <p>11 Q. One at some length. And then two further topics that</p> <p>12 are referred to in your witness statement.</p> <p>13 Just recapping on yesterday's discussion that we had</p> <p>14 regarding the RISC forms -- you said, at the beginning</p> <p>15 of one answer that you gave yesterday afternoon, that</p> <p>16 there were, to your way of thinking, five reasons behind</p> <p>17 the non-submission of the RISC forms. Do you recall</p> <p>18 that?</p> <p>19 A. Yes, sir.</p> <p>20 Q. I'm just going to list out the five, which I've tried to</p> <p>21 distil from the transcript of yesterday afternoon, and</p> <p>22 they are as follows.</p> <p>23 First of all, individual performance. Do you agree</p> <p>24 with that?</p> <p>25 A. Yes.</p>	<p>1 Mr Chan, could I ask you to be shown just one short</p> <p>2 passage from yesterday's transcript. So it's Day 13 at</p> <p>3 page 142.</p> <p>4 A. Which line?</p> <p>5 Q. If you could scroll down, please, to towards the bottom.</p> <p>6 Yes, that's it. Thank you very much.</p> <p>7 At line 15 -- do you see that?</p> <p>8 A. Yes, I saw that.</p> <p>9 Q. -- I said:</p> <p>10 "You mean the Kit Chan register?"</p> <p>11 Do you see that, Mr Chan?</p> <p>12 A. I saw that.</p> <p>13 Q. You said, "Yes", and then you said:</p> <p>14 "It was still issued from Leighton to MTR after</p> <p>15 I left the site. At that time, they addressed to</p> <p>16 Michael Fu and the two senior ConE[s], the same thing."</p> <p>17 Mr Chan, the last Kit Chan register that we have</p> <p>18 been given and that's in the files is dated 19 May 2016.</p> <p>19 That is just before you left the project.</p> <p>20 A. Yes.</p> <p>21 Q. What is the basis of your belief that the registers</p> <p>22 continued to be sent to Mr Fu and the other engineers,</p> <p>23 senior engineers, after you had left the site?</p> <p>24 A. Recently, I got a copy of an email, around dated 10 June</p> <p>25 2016, issued from Leighton to Michael Fu, attached the</p>
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<p>1 Q. Secondly, the importance or otherwise of the pours?</p> <p>2 A. Yes.</p> <p>3 Q. Just to flesh that out a bit, minor pours such as</p> <p>4 a short length of trough wall or a small area of trough</p> <p>5 slab is rather different than a major bay pour.</p> <p>6 A. Yes.</p> <p>7 Q. The third reason you gave was the non-user-friendly</p> <p>8 nature of the RISC form in today's construction</p> <p>9 environment?</p> <p>10 A. Yes.</p> <p>11 Q. The fourth reason I believe you gave was the delay, or</p> <p>12 potential delay, that may be occasioned to the works if</p> <p>13 the RISC form procedure is strictly adhered to?</p> <p>14 A. Yes.</p> <p>15 Q. And the last and fifth reason you gave was that the RISC</p> <p>16 form procedure is a contractual requirement and not</p> <p>17 a statutory requirement?</p> <p>18 A. Yes.</p> <p>19 Q. Therefore, in relation to that last one, you perceive</p> <p>20 that as more of an administrative procedure rather than</p> <p>21 something more fundamental?</p> <p>22 A. Yes.</p> <p>23 Q. Okay.</p> <p>24 I'm going to move on now I've got all of that clear</p> <p>25 on the transcript, I hope.</p>	<p>1 same report.</p> <p>2 Q. Right.</p> <p>3 A. So I think my legal team can produce that copy to you,</p> <p>4 if you want it.</p> <p>5 Q. It may be in the files and I've missed it, Mr Chan. I'm</p> <p>6 just trying to ascertain --</p> <p>7 A. I'm not sure whether it's in the files. I only recently</p> <p>8 got a chance to read this email.</p> <p>9 Q. All right. But at least that's the basis of your</p> <p>10 understanding or your belief?</p> <p>11 A. Yes. If you want it, I think my legal team can produce</p> <p>12 a copy for you.</p> <p>13 Q. All right. Thank you very much.</p> <p>14 A. Or you can ask Leighton to check if it's in their</p> <p>15 server.</p> <p>16 Q. Okay. You've answered my question anyway. That's fine.</p> <p>17 Could I ask you, please, to look at paragraph 44 of</p> <p>18 your witness statement. That's at page 5198. Where you</p> <p>19 say:</p> <p>20 "I should point out that I have been tasked to lead</p> <p>21 colleagues in the CM team to carry out an internal</p> <p>22 investigation to ascertain whether there is evidence to</p> <p>23 show that hold-point inspections were carried out</p> <p>24 notwithstanding the absence of some RISC forms. In this</p> <p>25 regard, we have collated the following information (to</p>

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<p>1 the extent that such information is available) as 2 evidence to show that hold-point inspections were 3 carried out". 4 Then you list seven items at the end of the 5 paragraph. Do you see that? 6 A. I saw that, yes. 7 Q. Mr Chan, if I have understood this correctly, is this 8 all part and parcel of the work that WSP have been doing 9 for MTR, or is this a separate exercise? 10 A. I think internally MTR doing their own investigation, 11 and we pass our finding to W -- the audit, whether the 12 assessment made are reasonable. Does it answer your 13 question? 14 Q. Are you passing your work that you're doing with your 15 colleagues to WSP? 16 A. Yes. 17 Q. You are? 18 A. Yes. Basically, it's the auditing team, make sure that 19 what we did are correct. 20 Q. Right. So essentially your team is assisting WSP -- 21 A. Yes. 22 Q. -- with the collation of all the information? 23 A. Exactly, yes. 24 Q. Okay. Understood. And presumably you are expecting all 25 of that material and the WSP audits to be part and</p>	<p>1 other matters. 2 A. Yes. 3 Q. Then you say: 4 "In relation to the NAT ..." 5 And then I'm not going to read it all out. Right at 6 the end of subparagraph (iii) you say -- that's at 5203: 7 "I understand that Leighton will submit the updated 8 as-constructed drawings shortly." 9 Do you see that? 10 A. Yes. 11 Q. Then, similarly, you state in relation to the SAT the 12 same thing. That is, at the end of subparagraph (ii): 13 "I understand that Leighton will submit the updated 14 as-constructed drawings reflecting the changes at the 15 EWL section of the SAT shortly." 16 Then, in relation to the HHS, similarly, you say at 17 subparagraph (iii) of paragraph 52: 18 "I understand that Leighton is in the course of 19 preparing a set of as-constructed drawings for HHS which 20 will reflect the locations of the couplers used in HHS." 21 Now, Mr Chan, your witness statement was dated 22 16 May 2019. Today is I think 14 June. Is there any 23 update on any of those matters that I've just referred 24 to? 25 A. According to my memory, on 17 May this year, Leighton</p>
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<p>1 parcel of the verification report that's to be produced 2 in due course? 3 A. I think so. 4 Q. All right. 5 We know that we have from WSP a report on the NAT 6 area and on the SAT area but not yet on the HHS, and we 7 are told that that is work in progress, so far as the 8 HHS is concerned. 9 A. Yes. 10 Q. But I think we've been told that you hope to produce -- 11 or WSP hope to produce the HHS report by the end of this 12 month. 13 A. Yes, this is our target. 14 Q. That's still the target, is it? 15 A. I think still a target. 16 Q. Okay. Thank you. 17 Lastly from me, Mr Chan, could I ask you please to 18 turn to paragraph 49 of your witness statement, where 19 you say: 20 "MTR has requested Leighton to provide the details 21 and locations of the deviations for several months. 22 However, Leighton has yet to formally submit the 23 required information to MTR ..." 24 And the deviations you have referred to in the 25 previous paragraphs which relate to the couplers and</p>	<p>1 did submit a set of as-constructed proposal, to indicate 2 the potential coupler location at NAT, SAT, HHS, to MTR 3 for verification. We are checking it now and hopefully 4 very soon we can pass our comments to Leighton, to ask 5 them to amend their drawing if they agree to our 6 comments. 7 Q. Could we please get up on the screen BB15, the first 8 page -- I'm afraid I don't know what number it is. 9 A. Yes, this is the letter, I think, 17 May; right? 10 Q. Yes. If we go on one page, please. 11 This, I think, is the letter, is it, Mr Chan? It's 12 17 May. 13 A. Can you scroll down? 14 Q. Scroll down, please. 15 It's to Mr Fu. 16 A. Yes, I think this is the letter. 17 Q. Right. You have the splendid file, BB15, in front of 18 you. 19 A. BB15? 20 Q. And that's all the material that was sent. 21 A. Yes. 22 Q. So that's the pile of material -- 23 A. Yes. 24 Q. -- that we can see in front of you, that was submitted 25 under cover of that letter, which you, the MTR, are</p>

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<p>1 currently analysing? 2 A. Yes. 3 MR PENNICOTT: Okay. Thank you very much. 4 Sir, I don't have any further questions for Mr Chan. 5 MR TSOI: I have no questions. 6 COMMISSIONER HANSFORD: I have one question just arising 7 from Mr Pennicott's examination and your answer. 8 You said that you saw RISC forms as being 9 a contractual requirement, not statutory, and 10 essentially an administrative procedure. Is that 11 correct? 12 A. This is my understanding. 13 COMMISSIONER HANSFORD: Do you also regard them as being 14 part of the project's quality records? 15 A. In certain extent. 16 COMMISSIONER HANSFORD: What do you mean, "in a certain 17 extent"? 18 A. There's no contractual requirement for us to keep all 19 these RISC forms in a file, right, for future reference. 20 It's just as a record during the course of construction. 21 COMMISSIONER HANSFORD: So how long are they kept then? 22 A. When the job finished, they just don't keep it. There's 23 no such requirement to keep it forever, not like 24 as-built drawings, you've got to keep it and pass it to 25 the operation division. We don't pass the RISC form to</p>	<p>1 you can have a young engineer involved in the inspection 2 side with Leighton who may miss one or two RISC forms, 3 he may ask for inspection but may not -- and promise the 4 RISC forms later; okay? Everybody agrees with that, and 5 they then get on with the next thing at work; okay? And 6 the young engineer forgets the RISC forms. 7 At the end of the contract, there's no need to 8 actually keep the RISC forms for a long period of time. 9 Nobody checks that every single RISC form has now been 10 filed. And, as it is, they are all destroyed maybe 11 several months later or a year or two later? 12 A. Exactly. That's what happened. 13 CHAIRMAN: Okay. 14 A. That's my understanding in the industry. 15 CHAIRMAN: And that would not be a secret? You know, 16 there's nothing kind of magical and mysterious and dark 17 and wonderful as to what happens to the RISC forms? 18 Everybody would know that once the contract is over, 19 provided there's no litigation or anything like that, 20 everybody is reasonably satisfied, the RISC forms will 21 be shredded? 22 A. That's my understanding, the current practice in the 23 industry. 24 CHAIRMAN: Which would be another reason, perhaps, not to 25 feel, if you are a young engineer, that this is a matter</p>
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<p>1 operation division for maintenance purpose. We will 2 pass the as-built drawings. 3 COMMISSIONER HANSFORD: And, to your knowledge, how long are 4 they retained? 5 A. It depends on the individual. There are no guidelines 6 or no specific PIMS saying how long you should keep the 7 RISC form on file for future reference. Normally, after 8 the job completed, when the project hand over to the 9 operation division for maintenance, then I think that -- 10 it depends on the site team, how they handle it. There 11 are no specific requirements how to handle the RISC 12 forms afterwards. 13 COMMISSIONER HANSFORD: So your understanding is it's left 14 to the discretion of the site team -- 15 A. Yes. 16 COMMISSIONER HANSFORD: -- as to whether or not to retain or 17 destroy the RISC forms at the end of the -- 18 A. Normally they don't keep because there's so many RISC 19 forms, it's tedious. Not like bore logs, you would keep 20 for certain months for contractual reasons, but not RISC 21 forms. That's my understanding. 22 COMMISSIONER HANSFORD: Okay. Thank you. 23 CHAIRMAN: So, in other words, assuming that the building 24 progress is not subject to criticism, and the actual 25 structures that are put up are not subject to criticism,</p>	<p>1 of life and death to get it done? 2 A. It's possible. 3 CHAIRMAN: Yes, Mr Chow. 4 Cross-examination by MR CHOW 5 MR CHOW: Good morning, Mr Chairman and Prof Hansford. 6 A. Good morning. 7 Q. Good morning, Mr Chan. I have some questions for you 8 regarding the evidence that you gave yesterday and 9 I represent the government. 10 Perhaps if I can start with paragraph 3 of your 11 statement. In paragraph 3 of your statement, you 12 mention that you were assigned by AECOM, which is 13 a consultant to MTRC, to work on the construction of the 14 Exhibition Centre Station. 15 Are you still working for MTRC or you have quit 16 MTRC? 17 A. I think I retired from MTRC end of March 2018. 18 Q. I see. 19 A. And after two-month holiday, MTR asked me whether I want 20 to help the project team at Exhibition Centre on 21 an advisory basis. Then I just accept it and they 22 employ me to work as a consultant. 23 Q. I see. During the time when you were employed by MTRC, 24 have you received any training on the PIMS system? 25 A. I can't remember. I was employed by MTR about nine</p>

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<p>1 years ago. But I was told that you've got to manage the</p> <p>2 project in accordance with the guidelines stated in</p> <p>3 various PIMS, because I always look at the PIMS. But</p> <p>4 whether I did this, I can't remember exactly.</p> <p>5 Q. Okay. So you are pretty familiar with the requirements</p> <p>6 of PIMS; correct?</p> <p>7 A. The major guidelines, major points, not every single</p> <p>8 detail, because there are so many PIMS. I only pay</p> <p>9 attention to the PIMS that's relevant to my management,</p> <p>10 the contract.</p> <p>11 Q. I see. Do you accept that the RISC form system forms</p> <p>12 part of the PIMS?</p> <p>13 A. Yes.</p> <p>14 Q. And you are familiar with the requirements of the RISC</p> <p>15 form system as set out in PIMS; right?</p> <p>16 A. I don't have very detailed knowledge but I know the PIMS</p> <p>17 system related to RISC form are similar to other</p> <p>18 projects in the industry, because I worked in many</p> <p>19 government projects in the past, so the RISC system is</p> <p>20 more or less the same, similar.</p> <p>21 Q. Right. To your understanding, what is the purpose of</p> <p>22 issuing RISC forms?</p> <p>23 A. My understanding, RISC forms have been in the industry</p> <p>24 for many, many years; right? They just a kind of</p> <p>25 written record, saying that certain inspection has been</p>	<p>1 construction work today is very different from 40 years</p> <p>2 ago, when you started your practice?</p> <p>3 A. Yes.</p> <p>4 Q. Nowadays there are a lot of other matters that the site</p> <p>5 people have to take care of, like labour dispute,</p> <p>6 environmental issues, safety issues, and that's why the</p> <p>7 site staff are very busy, they cannot handle the RISC</p> <p>8 form system. Is that what you are trying to say?</p> <p>9 A. It's part of the reason because, for example, compare</p> <p>10 simple: 40 years ago, every engineer may have to deal</p> <p>11 with 10 tasks per day, but nowadays they have to deal</p> <p>12 with 20 or 30 tasks a day; right? That's the comparison</p> <p>13 I want to mention.</p> <p>14 Q. Okay. And because the RISC form system has not changed</p> <p>15 over the past years and it has become not user-friendly</p> <p>16 and -- right?</p> <p>17 A. Yes, that's my personal opinion.</p> <p>18 Q. And in order not to delay the work, you yourself made</p> <p>19 a decision to differentiate minor pours from major</p> <p>20 pours, and for the minor pours you took the view that</p> <p>21 perhaps the RISC form system does not have to be</p> <p>22 strictly complied with; correct? That is your evidence?</p> <p>23 A. I think I would make this recommendation jointly with my</p> <p>24 team and the contractors; right? Not only personal</p> <p>25 behaviour. This is fact of life in the industry; right?</p>
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<p>1 carried out to the satisfaction of the engineers. That</p> <p>2 is the purpose.</p> <p>3 Q. I see. So would you accept that the RISC form system</p> <p>4 and the records contained in the RISC form, to a certain</p> <p>5 extent, provide a guarantee of the quality of the works</p> <p>6 executed?</p> <p>7 A. This is only one way to guarantee the quality of work.</p> <p>8 There are many other ways, like other test records, the</p> <p>9 test cube, photographing, many things, especially with</p> <p>10 the new technology in the world now, people can take a</p> <p>11 lot of photos, WhatsApp. All this can assist whoever</p> <p>12 wants to know the quality of the project. RISC is one</p> <p>13 of the means to record that.</p> <p>14 Q. But nevertheless you agree with me that the RISC form is</p> <p>15 a step and procedure that in a way ensures the quality</p> <p>16 of the works?</p> <p>17 A. Yes, definitely. 40 years ago, there's no technology.</p> <p>18 People all rely on pieces of paper. But now, with the</p> <p>19 new technology, everything got a photo, can take a lot</p> <p>20 of photos, right? So the world is changing.</p> <p>21 Q. Yesterday, you have expressed your view as to the</p> <p>22 practicality of the RISC form system. Do you recall</p> <p>23 that?</p> <p>24 A. Yes.</p> <p>25 Q. What I distil from your evidence is that -- now,</p>	<p>1 You follow every single minor pour, draw pit, the amount</p> <p>2 of paperwork involved is tremendous.</p> <p>3 Q. And in making that decision, you have not involved the</p> <p>4 senior management of MTRC; is that correct?</p> <p>5 A. I didn't particularly request this discussion with my</p> <p>6 seniors, because they are all construction</p> <p>7 professionals, probably they share the same view on this</p> <p>8 topic.</p> <p>9 Q. Right. May I ask at this point: what is the rationale</p> <p>10 behind your thinking, when you decided for minor pours</p> <p>11 then we don't need to strictly comply with the RISC</p> <p>12 system?</p> <p>13 A. This is from a practical point of view and professional</p> <p>14 judgment. I worked for many projects in the past. All</p> <p>15 the projects probably adopt similar practice. I don't</p> <p>16 think what we did in this project is the only project</p> <p>17 carry out this kind of judgment or procedures.</p> <p>18 Q. I see. I will come to that later on.</p> <p>19 Now, minor pours, how would you define "minor</p> <p>20 pours"?</p> <p>21 A. I think --</p> <p>22 Q. Is it on the basis of the volume of concreting, or does</p> <p>23 it depend on the importance of the structures or what?</p> <p>24 A. No, I think a minor pour -- we are all construction</p> <p>25 professionals, we know which structure is critical and</p>

<p style="text-align: right;">Page 17</p> <p>1 which is not critical. Like draw pit is a minor pour. 2 A small wall 1 or 2 metres high is a minor pour. It's 3 just a judgment made by the professional engineer 4 on site. 5 Q. Okay. Have you produced a list of works that you would 6 regard as minor pours and inform your subordinate that 7 in relation to those work, then perhaps we don't need to 8 enforce the requirement of RISC form? 9 A. Normally, this is not a general practice in the 10 industry. The reason why: it's all based on the 11 personal judgment and we agree on site with all the 12 people involved. 13 Q. So are you saying that, at that time, you left it to 14 your subordinates to decide whether, for a particular 15 part of the work, a RISC form was required to be issued 16 in advance? 17 A. I think we all would have discussion which are more 18 important than others; right? We have all this constant 19 dialogue among all interested parties on site. We 20 normally put down black and white, or this is a minor 21 pour, this is a major pour. We are all professionals, 22 we have worked on construction sites for many years; we 23 know which important, which not important. 24 Q. From my recollection, under the MTRC organisation, there 25 are also graduate engineers being asked to carry out</p>	<p style="text-align: right;">Page 19</p> <p>1 A. I can't speak on their behalf, because I'm not involved. 2 If I was involved in the construction of stitch joint, 3 I would personally myself see it and would also discuss 4 with the engineer, have they got a proper method 5 statement, all this. But I can't speak on their behalf 6 because all this is very subjective. It all depends on 7 the personal style of management; right? 8 Q. All right. Given what you told us just now, and that is 9 you consider a stitch joint not a minor pour, then you 10 would expect a RISC form should have been issued in 11 advance, before the hold-point inspection; correct? 12 A. In a perfect world, I expect that. 13 Q. But we all know that we are not living in a perfect 14 world, so to be practical, so what is your answer? 15 A. I can't speak on behalf of other people; right? 16 Different people have different opinions on all these 17 issues. But I would prefer that they should issue the 18 RISC form, if I was in charge. 19 Q. I see. 20 COMMISSIONER HANSFORD: Sorry, Mr Chan. You just said you 21 prefer that they should issue the RISC form if you were 22 in charge. I thought you were in charge? 23 A. No, I'm not in charge during the stitch joint 24 construction. 25 MR CHOW: Prof Hansford, Mr Chan actually left the site</p>
<p style="text-align: right;">Page 18</p> <p>1 hold-point inspections. Do you recall that? 2 A. Yes, because engineers need to train how to inspect 3 certain work on site, under the guidance of experienced 4 inspectors and engineers. 5 Q. Now, given that you have never produced a list of what 6 you regard as minor pours, you would expect that the 7 graduate engineer would make his own decision as to when 8 the RISC form can be left out? 9 A. No, I don't think that's a proper question. I think the 10 young engineer would keep talking to his mentor and his 11 experienced inspector. The graduate engineer only work 12 with some experienced professional. They would have 13 more constant dialogue on a daily basis. We don't need 14 to put down everything in writing. No one reads 15 everything. We just have constant dialogue. Their 16 experience counts. 17 Q. Right. Can I ask you this: would you regard the stitch 18 joint, which involve not very large volume of concrete, 19 as minor pour? 20 A. As a professional, I think stitch joint is not a minor 21 pour. It's an important structure, as far as I'm 22 concerned. This is my personal opinion. 23 Q. I see. Do you know whether your junior staff on site 24 also hold the same opinion, would be able to decide 25 whether stitch joint, for example --</p>	<p style="text-align: right;">Page 20</p> <p>1 before the execution of the original stitch joint. 2 COMMISSIONER HANSFORD: This is just in relation to the 3 stitch joints we are referring to? 4 MR CHOW: Yes. 5 COMMISSIONER HANSFORD: In that case, I understand. Thank 6 you. 7 MR CHOW: Now, you said the RISC form system is not 8 practical and cannot be fully implemented in today's 9 construction environment. 10 A. I not say not practical. I say it's not user-friendly. 11 You want to 100 per cent stick to that one, the industry 12 could provide more resources. That's the reason why we 13 can go to many construction sites in Hong Kong, more or 14 less they have similar problems. They won't achieve 15 100 per cent to meet all these requirements for RISC 16 form. Everyone knows in the industry, just be honest 17 and tell you the truth. 18 Q. Now, in the MTRC's opening for the first part of this 19 Inquiry, under paragraph 4, MTRC said: 20 "MTRC has used its own Project Integrated Management 21 System (PIMS), which is certified to be ISO 9001 22 compliant, to manage and deliver successfully many 23 significant railway projects for over 20 years." 24 Would you disagree with this statement? 25 A. I agree with this statement.</p>

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<p>1 Q. And under paragraph 66 of MTRC's opening for part 1 of 2 this Inquiry, MTRC went on to say: 3 "MTRC has also established and put in place what is 4 referred to as PIMS, being its Project Integrated 5 Management System. PIMS comprises a set of project 6 management documents setting out the procedures and 7 practices to be followed by MTRC staff and has now been 8 used in managing MTRC's railway projects for over 9 20 years. PIMS has been tried and tested over a lengthy 10 period of time, and this constitutes cogent evidence of 11 the adequacy, suitability and effectiveness of PIMS for 12 railway projects." 13 Do you agree with this statement? 14 A. I agree. 15 Q. All right. 16 "PIMS has always been designed to be compliant with 17 ISO 9001 international standards concerning quality 18 management systems." 19 Do you agree with this statement? 20 A. I agree. 21 Q. Right. And: 22 "The robustness of PIMS has been endorsed by various 23 independent organisations." 24 Do you agree with this statement? 25 A. I agree.</p>	<p>1 sure no one can design a system that there won't be any 2 mistakes on a construction project. That is 3 unrealistic. 4 Q. Do you accept that you -- 5 CHAIRMAN: Sorry, again, I'm a little -- how can I put 6 this -- confused at the moment. Are you suggesting -- 7 will it be government's view that the good old RISC form 8 which has stood everybody in good stead for 40 years 9 should remain as a document, a bit like the flintlock 10 musket when put up against machine guns? 11 MR CHOW: No, of course not, Mr Chairman. 12 CHAIRMAN: Because my understanding, from what Mr Chan is 13 saying, is there are a number of reasons for the failure 14 of the system in this instance. One of them is 15 individual performance, and in fact Mr Pennicott quoted 16 that first. But what he is saying is there are lots 17 of -- you know, we can improve this, so that while the 18 PIMS concept is robust, within that concept there are 19 individual aspects of the system which can be improved. 20 Would that be right, Mr Chan? 21 A. I totally agree with you, Mr Chairman. 22 CHAIRMAN: That's as I've understood it. I'm just wondering 23 if it's going to be government's view, "No, let's stay 24 with the flintlock musket." 25 MR CHOW: Certainly this is not our position. The point</p>
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<p>1 Q. And: 2 "... MTRC's project management processes and 3 controls 'are known to be robust and in line with 4 industry best practice'. " 5 Do you agree with this statement? 6 A. I totally agree. 7 Q. "They are regularly reduced and audited by outside 8 bodies and have been proven and refined through the 9 delivery of many high-quality railway projects by MTRCL 10 in Hong Kong and abroad." 11 Do you agree with this statement? 12 A. I totally agree. 13 Q. I'm afraid I have to suggest to you that the problem 14 that we have today is not because of the RISC form 15 system itself. It's because of the mentality and 16 attitude of the individual site staff. Do you agree 17 with me? 18 A. I think, in the construction industry, there are many 19 construction professionals, as I mentioned yesterday, 20 some are more dedicated, more diligent. You are bound 21 to have some people who are not performing -- not 22 carrying out their duties in due diligence. As 23 I mentioned earlier, there's no project management 24 system in the world that can prevent all mistakes or 25 avoid all mistakes. We are human beings. I'm pretty</p>	<p>1 that I am trying to make is that of course the industry, 2 the technology involved in the industry, will continue 3 to develop, to be developed, and the system has to be 4 reviewed from time to time to make it in line with the 5 latest technology and to improve it. But given that at 6 a certain point in time there's a system there, and the 7 system, if can be resolved by way of improving the 8 quality of the individual to make it work at 9 a particular stage, then this is something that has to 10 be stuck to and to be complied with. But there's 11 nothing to stop -- 12 CHAIRMAN: I accept that. I'm not saying that -- and 13 obviously it's for the Commissioner and I to consider 14 how we view what Mr Chan says, and we may find some of 15 it persuasive, we may find some of it or a lot of it not 16 persuasive, but what I was just a little concerned about 17 was the fact that there appeared to be a suggestion in 18 your questioning that, "There we are, you agree the 19 system is robust, it's this, it's effective, and it 20 should be followed and there's no reason to change 21 anything." 22 MR CHOW: No, this is not my intention. I do apologise if 23 I gave that impression to the Commission. 24 CHAIRMAN: No. It's just that, for example -- I say it, 25 just tossing it into the wind -- I went into a very,</p>

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<p>1 very large cafe here in Hong Kong the other day and 2 ordered a cup of coffee, and it was all done in 3 a nanosecond on a little what looked like a small mobile 4 telephone, and the coffee arrived, just as I had ordered 5 it, a couple of minutes later. There was no filling out 6 the old order form as they used to have it. So you can 7 begin to see that technology does speed up things. 8 MR CHOW: Yes, Mr Chairman. Actually I realised recently 9 that what happens nowadays is even more advanced than 10 that. You can place an order before you arrive at the 11 shop, and when you arrive you can get your coffee. 12 CHAIRMAN: That's what I mean. The only reason I do this -- 13 I'm not protecting Mr Chan in any way, far from it, it's 14 just that the methodology of your questioning seems so 15 strong as to what we've got is good enough and therefore 16 we shouldn't change it. 17 MR CHOW: No, this is not what I'm trying to get at. 18 CHAIRMAN: Okay. I understand you now. Thank you. That 19 helps me. 20 MR CHOW: Mr Chan, Mr Pennicott this morning has helpfully 21 summarised the five factors that you said which may 22 contribute to the result of lack of RISC forms, and one 23 of the five factors relates to the performance of 24 an individual. Do you recall that? 25 A. Yes.</p>	<p>1 as ... 2 Are you suggesting that one should expect similar 3 problems in those projects as well? 4 A. I can't say at this moment. I don't have any 5 information to support what I'm going to say. But if 6 there's a problem, I should be aware; correct? But this 7 happened four years ago, many, many years ago. I can't 8 have any objective evidence to support what should I 9 answer. 10 Q. Perhaps I'll put it this way. When you worked, for 11 example, on South Island Line, were you aware of having 12 a similar problem in that project, lack of RISC form, 13 late submission of RISC form? 14 A. I think this issue keeps coming up on and off. I'm 15 pretty sure the same problem -- 16 MR BOULDING: Sir, I hesitate to intervene, but this, so far 17 as we are concerned, is not part of the scope of this 18 Commission of Inquiry, to investigate other projects, to 19 see whether or not there were failings of the kind that 20 my learned friend is putting to this witness, and 21 I would urge you not to expand the scope of the Inquiry 22 to involve these other projects, in the sense that my 23 learned friend wants to investigate them. 24 CHAIRMAN: I suspect what Mr Chow is trying to do -- sorry, 25 I'm not putting words in your mouth, Mr Chow -- is not</p>
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<p>1 Q. Now, we have seen evidence that at times, with 2 a particular individual, for example Alan Yeung, when he 3 worked in the SAT, he was able to comply with the 4 requirement of RISC forms, largely comply with. There's 5 only a very little number of missing RISC forms. 6 So do you agree that although the system may not be 7 as user-friendly as you would wish it to be, but if the 8 individual has a correct attitude and of a certain 9 quality, one can still make the system work? 10 A. Yes. What I'm trying to say is that if the system is 11 user-friendly, there's less chance to make mistake by 12 individuals. If the system is very labour-intensive, 13 there's more chance. As I mentioned earlier, individual 14 performance is the key; right? Different people have 15 different performance standards; right? You can't just 16 use that, one people can do, the others can do it the 17 same. No. People are not equal, especially in project 18 management. 19 Q. Earlier, you mentioned that this problem is common in 20 other projects as well. Do you recall that? 21 A. Yes, I made that statement before. 22 Q. From your statement, I understand that you have been 23 involved in other projects. For example, under 24 paragraph 2, you have been involved in the construction 25 of the South Island Line and Express Rail Link, as well</p>	<p>1 to investigate other projects; rather, to sort of say, 2 "Isn't it in fact the case that these failings were 3 limited just to this?" Or perhaps if I'm wrong then 4 Mr Chow can assist me. 5 MR CHOW: The reason why I ask this question is it is 6 relevant to -- well, I try to test the reliability of 7 Mr Chan's evidence that there is problem with the system 8 itself rather than a problem of individuals. Now, if 9 there is a problem with the system itself, then 10 obviously similar problems would have inevitably 11 occurred in other projects, and that is really what I'm 12 trying to get to. 13 CHAIRMAN: Not necessarily. I can understand if it's 14 an entirely automated system. Then you can say, if the 15 system fails in project A, you would expect it to fail 16 in project B. I think what Mr Chan is saying is there 17 were aspects of this system, for example the antiquated 18 handwritten nature of the RISC forms, that presented, in 19 a number of instances, a non-user-friendly methodology 20 which, with increased pressures of building today, 21 people may have found some short-cut around. 22 Now, whether they did so on other projects as well, 23 I don't know. I mean, you know, sometimes you can stick 24 absolutely to what you're told to do because you have 25 a very tight military-style management; right? And that</p>

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<p>1 may cause delays. Another project, you may find that 2 there's not the same tight military-style management, 3 and there's some concentration on getting the work done 4 quicker, and so perhaps the forms are not completed. 5 That's as I understand Mr Chan. He's saying it's there, 6 the system as a whole is good, it's robust, but there 7 are aspects of it, and the RISC forms is one aspect, 8 which, because it was no longer suitable really for this 9 modern dynamism, could be circumvented and was 10 circumvented in this particular case. That's all. 11 MR CHOW: I take your point, Mr Chairman. I will move on to 12 another topic. 13 Mr Chan, you mentioned about the system being 14 non-user-friendly. Have you reflected this to the 15 quality assurance department of MTRC, in order to 16 improve it? 17 A. I can't remember whether I discussed that before or not, 18 but ... I can't remember whether I discussed that or 19 not. No recollection. 20 Q. Are you aware of a RISC register within MTRC's computer 21 system? 22 A. I answered this question yesterday. Yes, I have some 23 idea of the existence of that system. 24 Q. We were told by one of your inspectors, or MTRC's 25 inspectors of works, that the system does not allow them</p>	<p>1 with Mr Kitching, who was the project director of 2 Leighton. 3 Can I ask you to guess what his answer was? 4 A. I don't know because I didn't read the transcript. 5 MR BOULDING: This is not a game, asking a witness to guess 6 what his answer is. 7 CHAIRMAN: I think if you could put it to the -- 8 MR CHOW: Yes. The reason why I ask him to guess is to see 9 whether it is obvious, what Leighton would have done 10 would be quite obvious in such circumstances. Never 11 mind. I will put it to him. 12 CHAIRMAN: Why not just put it to Mr Chan, "And his answer 13 was ... do you have any comment in that regard?" 14 MR CHOW: And his answer was, "Of course in such 15 circumstances I would put in the necessary resources to 16 make sure that the work is not delayed, to make sure 17 that RISC forms would have been issued in advance." 18 Do you have any comment about that? 19 A. I think this is a positive answer from the project 20 director. I appreciate this comment. 21 Q. I see. Would you expect that if you had insisted on 22 strict compliance with the RISC form system and the 23 project director of Leighton at that time would have 24 reacted similarly? 25 A. I would expect they would be more cooperate, if I insist</p>
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<p>1 to input information about the hold-point inspection 2 result, if no RISC form has been generated or issued by 3 Leighton. 4 A. I'm not familiar with the detail of the management of 5 the RISC forms. I rely on what they said; right? 6 Because I'm not personally involved with the management 7 of the RISC forms. So what my inspector said should be 8 correct. 9 Q. Okay. 10 A. I've got no knowledge about that. 11 Q. All right. 12 Before I leave the subject of RISC forms -- now, you 13 explained, because of all these problems with the 14 system, and you exercised your discretion and allowed 15 certain kind of works that the RISC form system doesn't 16 have to be strictly complied with. When Mr Kitching of 17 Leighton gave evidence, I asked Mr Kitching the 18 following question. I asked him: if MTRC insisted that 19 RISC form has to be issued in advance, otherwise no 20 hold-point inspection would be conducted and they cannot 21 proceed with the concreting work -- I asked him, in such 22 circumstances, would the project director of the project 23 increase the resources to make sure that RISC forms are 24 duly issued, in order not to cause delay. This is 25 a question -- in gist, this is the question I raised</p>	<p>1 that, but to make sure 100 per cent comply, I don't 2 think it's practically possible. They definitely will 3 increase resources and adopt a more cooperate attitude, 4 to ensure that individuals would comply. Because it all 5 depends on individuals. Even their management insist 6 you've got to comply, but individuals still fail. It's 7 difficult to make sure there are no mistakes on site. 8 That's impossible. 9 Q. Thank you. I will move on to a different topic now. 10 Can I refer you to paragraph 18 of your statement, 11 please, subparagraph (v) at page BB5192. 12 In this paragraph -- well, basically, this is the 13 paragraph where you set out the steps and procedure 14 involved in the construction of the works in HHS. Now, 15 under subparagraph (v), you said: 16 "Before pouring concrete, representatives from MTRCL 17 and Leighton would carry out a joint final inspection to 18 confirm the condition of the construction joint, 19 cast-in-items, starter bar connections and the general 20 cleanliness of the reinforcement and formwork". 21 Now, the starter bar connections that you mention 22 here, are you referring to the additional couplers that 23 Leighton used to replace the lapped bars? 24 A. I think this is a general statement. If there's 25 a coupler, I would expect the inspector will have</p>



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<p>1 a look, see whether they are properly installed or not.</p> <p>2 Q. Okay. At the time when you were still the construction</p> <p>3 manager of the project, were you aware that Leighton</p> <p>4 replaced -- at certain locations replaced the lapped</p> <p>5 bars with couplers?</p> <p>6 A. Yes, I'm aware, because I think they had submitted</p> <p>7 a proposal back in 2015 saying that at the EVA they want</p> <p>8 to replace some starter bars by couplers to provide</p> <p>9 access for site logistic purpose.</p> <p>10 Q. Right. From your recollection, was there any drawings</p> <p>11 or plans showing where the lapped bars ought to be</p> <p>12 replaced with couplers?</p> <p>13 A. In that particular submission, I had a chance to go</p> <p>14 through the submission recently. I think they showed</p> <p>15 the location where they want to replace the lapped bars</p> <p>16 by couplers, in that submission, at the EVA.</p> <p>17 Q. If there is, perhaps I have missed it from the hearing</p> <p>18 bundle.</p> <p>19 COMMISSIONER HANSFORD: Sorry, can you remind me what EVA</p> <p>20 is?</p> <p>21 A. Emergency vehicular access.</p> <p>22 MR CHOW: Emergency vehicular access, I think.</p> <p>23 CHAIRMAN: Sorry, I didn't -- there were two people talking</p> <p>24 at once.</p> <p>25 WITNESS: Sorry about that, Mr Chairman.</p>	<p>1 Q. Right. Do you agree that it would have been much better</p> <p>2 if, at the time of construction, drawings were prepared</p> <p>3 showing exactly the location where lapped bars were to</p> <p>4 be replaced, such that your inspectors, when they carry</p> <p>5 out the hold-point inspection, they knew exactly what</p> <p>6 they are expected to see? At least they would have the</p> <p>7 drawings to check against. Would it be --</p> <p>8 A. I think, in a perfect world, the more drawings you have,</p> <p>9 the better. But would it be practical? When you say,</p> <p>10 let's say, 10 metres of a wall, starter bars replaced by</p> <p>11 couplers, in fact the drawing had nothing changed.</p> <p>12 Still arrangement the same; the same number, same</p> <p>13 diameter, same spacing. We can still use the same</p> <p>14 drawing to check everything on site. As long as you</p> <p>15 know the extent of coupler, where normally -- we don't</p> <p>16 issue a drawing, updated drawing, when there's a minor</p> <p>17 change. Normally we group -- could be 10 or 20 minor</p> <p>18 changes, at the end of the day incorporate. Every time</p> <p>19 there's minor change you update a drawing, it's just</p> <p>20 tedious. It's not practical. I don't think many</p> <p>21 contractors will do that. That's why we have a system</p> <p>22 that you've got to submit a final amendment for approval</p> <p>23 and put everything in the final as-built drawing.</p> <p>24 I think the system says "any major change" but not</p> <p>25 every minor detail. That's the spirit of the PIMS.</p>
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<p>1 MR CHOW: It's my fault.</p> <p>2 CHAIRMAN: Thank you. Emergency vehicular access. Thank</p> <p>3 you.</p> <p>4 MR CHOW: I'm not aware of the existence of a plan showing</p> <p>5 the location where changes of this type were shown. But</p> <p>6 if there existed a drawing, then obviously I would not</p> <p>7 expect MTRC were still waiting for the information from</p> <p>8 Leighton, because in paragraph 49 you said:</p> <p>9 "MTRCL has requested Leighton to provide the details</p> <p>10 and locations of the deviations for several months.</p> <p>11 However, Leighton has yet to formally submit the</p> <p>12 required information to MTRCL for approval."</p> <p>13 So I would -- well, my understanding, if you say</p> <p>14 something like this, it must be the case that there</p> <p>15 exists no drawings during the time of construction.</p> <p>16 A. No. What I'm trying to say is that the contractor did</p> <p>17 submit a proposal in the past, saying they want to</p> <p>18 replace some lapped bars by couplers at certain</p> <p>19 locations. After that proposal, they use the same</p> <p>20 spirit or same concept, apply to other areas, and those</p> <p>21 areas they never submit a formal proposal for us, for</p> <p>22 approval and record.</p> <p>23 Q. I see.</p> <p>24 A. There are so many locations on site that they adopt this</p> <p>25 proposal to replace lapped bars by couplers.</p>	<p>1 Because this minor replacement is so easy, everyone can</p> <p>2 know, no need to use a new drawing to do the rebar</p> <p>3 checking.</p> <p>4 Q. In paragraph 54 of your statement, when you talked about</p> <p>5 these changes, you said -- in line 4 you said:</p> <p>6 "I also considered this a minor change ..."</p> <p>7 Do you see that?</p> <p>8 A. Yes, I saw that.</p> <p>9 Q. "... as lapped bars and couplers serve the same purpose</p> <p>10 and the change in the present case would not affect the</p> <p>11 structural integrity of the structure."</p> <p>12 Do you agree that this statement is only correct if</p> <p>13 all the coupler assemblies were properly installed as</p> <p>14 per the requirement of the supplier and the code?</p> <p>15 A. This is the implied term.</p> <p>16 Q. Right.</p> <p>17 A. All these proprietary products got to be properly</p> <p>18 installed on site in accordance with the manufacturer's</p> <p>19 recommendations.</p> <p>20 Q. And we have no records of proper supervision or</p> <p>21 inspection of these additional coupler assemblies?</p> <p>22 A. That is a fact of life on a construction site.</p> <p>23 Record-keeping, different people have different</p> <p>24 expectations. I'm pretty sure my inspectors, they are</p> <p>25 very experienced; the contractor also deployed qualified</p>

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<p>1 persons to supervise the installation of couplers at the 2 construction joint. And they also take photos, the RISC 3 form, all these pre-pour checks, all this; there are 4 many different ways to ensure that all the couplers are 5 properly installed.</p> <p>6 And in fact, all these coupler installations are not 7 difficult to install, because the starter bar, it's 8 still common; everywhere in the industry adopts this one 9 in the last 20 years. And different people may have 10 different expectation about what kind of record-keeping 11 you expect.</p> <p>12 In the same token, you can also expect, if you don't 13 use a coupler, you do have to have some record to 14 measure the lap length too, and I'm pretty sure no one 15 will measure the lap length at the construction joint. 16 Either you have a lap length or a coupler. You say 17 you've got to have a proper record about coupler 18 installation, then the same token you expect people to 19 measure every lapped bar, it is 42D or 41D, or whatever?</p> <p>20 Currently, the expectation in the industry, no one 21 measures this. They just trust the guy who supervises 22 the works to say, "Ah, okay, you do the pre-pour check; 23 okay, you go ahead concreting." But if the expectation 24 from society or from the government is different, people 25 will start to have all these records. Like now, since</p>	<p>1 stated by the government in the acceptance letter, 2 should not apply to those additional couplers that 3 Leighton used to replace the lapped bars?</p> <p>4 A. I would put it this way. At that moment, when they 5 propose to replace the lapped bars by couplers at SAT 6 and NAT, as far as we are concerned they are minor 7 changes. In our PIMS system, all these minor changes 8 are allowable. If you look at appendix 7, saying that 9 if they comply with the specification, the site 10 conditions, you can go ahead and do it, without seeking 11 prior approval from the Building Authority.</p> <p>12 Q. That is not my point. Earlier, you agreed with me that 13 your statement about this is a minor change, it would 14 not affect the structural integrity, this statement is 15 only true provided that the coupler assemblies were 16 properly installed. You remember that?</p> <p>17 A. I agree.</p> <p>18 Q. To ensure that the coupler assemblies were properly 19 installed, in relation to other couplers which was shown 20 in the accepted drawings, the government imposed certain 21 conditions in relation to supervision of the 22 installation work; right?</p> <p>23 A. Yes.</p> <p>24 Q. Now, my question was, given that the government imposed 25 a supervision requirement for those couplers shown on</p>
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<p>1 last year, I'm pretty sure the industry adopt a more 2 stringent record-keeping exercise because they are aware 3 that the government have high expectations about 4 record-keeping. Before that, people expect that they 5 trust the guy who install, that is all they need to do. 6 It's all the expectation, what you expect from the 7 industry.</p> <p>8 Q. Mr Chan, in the design of NAT or SAT, couplers were used 9 in the accepted design, as shown in the accepted design. 10 You are aware of that; right?</p> <p>11 A. Yes.</p> <p>12 Q. I assume that you are also aware that the government, 13 when this design was accepted, imposed conditions in 14 relation to supervision of the installation of coupler 15 assembly. Are you aware of those conditions as well?</p> <p>16 A. Yes.</p> <p>17 Q. Now, there are two sets of requirements, one for the 18 ductility couplers, and we have another set of 19 requirements for non-ductility couplers. Are you aware 20 of those requirements?</p> <p>21 A. I'm aware.</p> <p>22 Q. Okay. I'm now talking about the additional couplers 23 that Leighton used to replace the lapped bars. Do you 24 see any reason why the requirement for -- the level of 25 supervision required for the non-ductility couplers, as</p>	<p>1 the drawings, can you think of any reason why the 2 additional couplers that Leighton used, which you 3 allowed, should not be subject to the same level of 4 supervision, to ensure that they were properly 5 connected?</p> <p>6 A. I think the proposal to replace lapped bars by couplers, 7 I'm pretty sure the contractor ...(unclear words)... 8 will adopt a similar approach and ensure the couplers 9 are properly installed, although they don't put all this 10 in a written inspection log book, but I'm pretty sure 11 they do carry out the inspection. But as far as just 12 I mentioned earlier, the expectation of record-keeping, 13 at that time the contractor doesn't expect that there 14 should be a detailed record. They forget to put all 15 this in writing, but I'm pretty sure they follow the 16 recommendation by the manufacturer to install the 17 coupler properly and have been supervised by my 18 inspector during the course of the construction.</p> <p>19 Q. You said you are pretty sure that the contractor did 20 carry out -- "they do carry out the inspection", you 21 mean your inspector?</p> <p>22 A. Yes.</p> <p>23 Q. But do you know how they carry out the inspection?</p> <p>24 A. Normally, I think my colleague, Victor Tung, I mentioned 25 yesterday, will check it visually, and also randomly use</p>

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<p>1 manual check; right? This is a standard practice in the 2 industry. This coupler installation is so easy job, 3 like capping beam, a plastic cap to a dowel bar in 4 a movement joint, a very simple operation, have been in 5 the industry for many, many years. It's just the 6 expectation. What to expect, what kind of expectation 7 from the government for record-keeping? But now 8 everyone knows that the government want more 9 record-keeping for coupler installation, people start 10 preparing all these records now. In the past, probably 11 they don't expect this is the requirement. 12 Q. So you expect your inspector would have checked? 13 A. Yes, because this is standard practice. They are all 14 professional inspectors. They know what to do. It's 15 not rocket science. It's so simple to do. Like 16 a lapped bar, they also by visual -- they said, "Just 17 measure randomly", or "This achieve 42D, the rest should 18 be the same", by visual inspection. 19 Q. Right. So I would imagine that the defective coupler 20 assembly that we subsequently discovered in the stitch 21 joint would have shocked you? 22 A. I'm pretty sure it shocked me. If that's the case, 23 maybe caused by the mistake of certain person on site. 24 There must be a localised problem, a mistake committed 25 by certain people on site.</p>	<p>1 such requirement how long you should keep. 2 CHAIRMAN: Aren't there really? 3 A. No, I don't think so. In the PIMS, there is no thing. 4 Even in the government project I run in the past year, 5 there's no such requirement how long you should keep 6 a RISC form. 7 CHAIRMAN: It's just, I suppose, an outsider, with no 8 knowledge, might think, as Prof Hansford has said, if 9 it's a form of quality record, which it is, you may well 10 need to keep it for an extended period of time because 11 quality may be called into question well after the 12 completion of the whole project. 13 A. That is the reality in the industry. There's no such 14 requirement. But if the testing of the pile test 15 record, load test, welding record, grouting test record, 16 it's all there, we all submit to the government because 17 it's a statutory requirement, they have record, but 18 no one ever asks you to submit RISC form records. 19 CHAIRMAN: Thank you very much. 20 Mr Boulding. 21 Re-examination by MR BOULDING 22 MR BOULDING: Thank you, sir. 23 Good morning, Mr Chan. 24 A. Good morning. 25 Q. I have just one matter I'd like to discuss with you. Do</p>
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<p>1 MR CHOW: Thank you very much, Mr Chan. I have no more 2 questions for you. 3 WITNESS: Thank you. 4 MR CLAYTON: I have no questions, sir. 5 MR SHIEH: I have received mixed messages. If we could take 6 an earlier than usual morning break while I consider the 7 matter, it may well be that we can save time. 8 CHAIRMAN: Yes, certainly. Ten minutes. 9 MR SHIEH: Very well. 10 CHAIRMAN: Thank you. 11 (11.07 am) 12 (A short adjournment) 13 (11.22 am) 14 MR SHIEH: There's no further questions from Leighton. 15 CHAIRMAN: Thank you. Can I ask one question, just quickly. 16 MR BOULDING: Please go ahead, sir. 17 CHAIRMAN: You mentioned about the fact that the RISC forms 18 are, at some stage, after the completion of all the 19 work, destroyed. There would, would there not, however, 20 be a period of time when they are kept? 21 A. I've got no idea how long they would keep. It all 22 depends on individual project team, whether they've got 23 room, because it's quite a lot of files, right, may have 24 10 or 100 files for that. It all depends on the 25 individual project team's management style. There is no</p>	<p>1 you remember being asked by Mr Chow, counsel for the 2 government, about the change from lapped bars to 3 couplers in the EVA? 4 A. Yes. 5 Q. I wonder if we can look at your witness statement, 6 paragraph 54, which you discussed with Mr Chow. That's 7 BB5204. 8 A. Yes, I saw that. 9 Q. Here you deal, do you not, with the fact that you were 10 in fact aware of the introduction of couplers by 11 Leightons; correct? 12 A. Yes. 13 Q. And you say, in the second sentence: 14 "... as I explained in paragraphs 46 above, the use 15 of couplers in lieu of lapped bars is very common in the 16 construction and engineering industry involving a large 17 civil project ..." 18 That's your experience, is it? 19 A. Yes. 20 Q. And you say you "considered this [to be] a minor change, 21 as lapped bars and couplers serve the same purpose and 22 the change in the present case would not affect the 23 structural integrity of the structure." 24 Do you remember discussing that particular sentence 25 with my learned friend Mr Chow?</p>

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<p>1 A. Yes.</p> <p>2 Q. I wonder if we can look at a document together. Could</p> <p>3 you go to bundle C, page 8348.</p> <p>4 Do you there see the first page of the Code of</p> <p>5 Practice for Structural Use of Concrete 2013?</p> <p>6 A. Yes, I saw that.</p> <p>7 Q. Is this a code of practice that you are aware of,</p> <p>8 Mr Chan?</p> <p>9 A. Yes.</p> <p>10 Q. I wonder if you would be kind enough to go to</p> <p>11 page C8478. Thank you. If we could just expand it.</p> <p>12 Yes, clause 8.7.</p> <p>13 Do you see clause 8.7, "Laps and mechanical</p> <p>14 couplers"?</p> <p>15 A. I saw it.</p> <p>16 Q. 8.7.1, could you read that out to the learned</p> <p>17 Commissioners, please?</p> <p>18 A. "Forces are transmitted from one bar to another by:</p> <p>19 (a) lapping of bars, with or without bends or hooks;</p> <p>20 (b) welding; or</p> <p>21 (c) mechanical devices assuring load transfer in</p> <p>22 tension and/or compression.</p> <p>23 In joints where imposed loading is predominantly</p> <p>24 cyclical bars should not be joined by welding."</p> <p>25 Q. Do I understand subparagraph (c) correctly when I say to</p>	<p>1 Q. Now, you have prepared for the learned Commissioners'</p> <p>2 assistance in this Inquiry a solitary witness statement.</p> <p>3 Is that correct?</p> <p>4 A. That's correct.</p> <p>5 Q. If we could turn up the first page of that. That's</p> <p>6 BB8/5152.</p> <p>7 A. Yes.</p> <p>8 Q. Do we there see the first page of your witness</p> <p>9 statement, Dr Ewen?</p> <p>10 A. We do.</p> <p>11 Q. If we could go on, please, to the signature page which</p> <p>12 I trust we'll find at page 5166.</p> <p>13 A. Yes.</p> <p>14 Q. There do we see, Dr Ewen, your signature under the date</p> <p>15 of 17 May 2019?</p> <p>16 A. We do.</p> <p>17 Q. Do I take it that the contents of this witness statement</p> <p>18 are true to the best of your knowledge and belief?</p> <p>19 A. Yes.</p> <p>20 Q. It's conventional, Dr Ewen, to place the witnesses in</p> <p>21 their respective organisations, and for that purpose</p> <p>22 perhaps we could go to B2/827.</p> <p>23 There do we see this is dated August 2018, bottom</p> <p>24 left-hand corner, and as we know things have moved on</p> <p>25 slightly since then, not least because Mr Leong as gone,</p>
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<p>1 you that a mechanical device would indeed include</p> <p>2 a coupler?</p> <p>3 A. Yes.</p> <p>4 Q. And does that code of practice, so far as you are</p> <p>5 concerned, support the points you make in paragraph 54,</p> <p>6 when you tell the learned Commissioners that lapped bars</p> <p>7 and couplers serve the same purpose?</p> <p>8 A. Yes.</p> <p>9 MR BOULDING: Thank you very much indeed, Mr Chan. I have</p> <p>10 no further questions for you. I don't know whether the</p> <p>11 professor or the Commissioner have.</p> <p>12 CHAIRMAN: Thank you very much indeed, Mr Chan. Thank you</p> <p>13 very much. Your evidence is now completed.</p> <p>14 WITNESS: Thank you very much, sir. See you later. In</p> <p>15 social gatherings, not here.</p> <p>16 CHAIRMAN: I hope that's not a suggestion that there's going</p> <p>17 to be a further extension to this Inquiry!</p> <p>18 WITNESS: Thank you. See you later.</p> <p>19 (The witness was released)</p> <p>20 MR BOULDING: Sir, I shall now call MTRC's last witness, and</p> <p>21 that's Dr Peter Ewen.</p> <p>22 DR PETER EWEN (affirmed)</p> <p>23 Examination-in-chief by MR BOULDING</p> <p>24 Q. Good morning, Dr Ewen.</p> <p>25 A. Good morning.</p>	<p>1 but do we there see you, Dr Ewen, out on the far-left</p> <p>2 wing, as the engineering director?</p> <p>3 A. Yes.</p> <p>4 Q. Now, your statement, Dr Ewen, I would like to ask you</p> <p>5 a couple of supplementary questions with the</p> <p>6 Commissioners' leave.</p> <p>7 First of all, could I invite your attention to</p> <p>8 paragraph 42. That's on page BB5163. There you deal,</p> <p>9 do you not, with MTR inviting T&amp;T -- that's Turner</p> <p>10 &amp; Townsend; correct? -- to return to Hong Kong in or</p> <p>11 around May 2019 to undertake an interim health check?</p> <p>12 A. Yes, indeed.</p> <p>13 Q. Have they in fact carried that interim health check out?</p> <p>14 A. Yes, I have.</p> <p>15 Q. I wonder if we can identify the document for the benefit</p> <p>16 of the learned Commissioners. Could we go to BB9746.</p> <p>17 There we see, do we not, the report which has been</p> <p>18 prepared by Turner &amp; Townsend?</p> <p>19 A. Correct.</p> <p>20 Q. It's dated 19 May, and if you would be kind enough to go</p> <p>21 to 9747, do we there see the reference to carrying out</p> <p>22 "a light touch 'health check' on progress (ie not</p> <p>23 a formal audit)"?</p> <p>24 A. Correct.</p> <p>25 Q. And is it your understanding that that's what they've</p>

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<p>1 done and the results thereof are contained in this 2 document? 3 A. Yes. 4 Q. I wonder if we can just have a quick peek at its terms. 5 Perhaps move on to 9748. Do you there see the executive 6 summary? 7 A. I do. 8 Q. Have you had an opportunity to read that to yourself? 9 A. Yes. 10 Q. Does that give you any comfort so far as the steps and 11 measures that MTR have put in place to date to improve, 12 amongst other things, their project management 13 procedures? 14 A. Yes, it does. 15 Q. Thank you. 16 Then if we could go, please, to paragraph -- I think 17 it's 87 -- yes, it's 87, which is on page 5176. There 18 you tell the learned Commissioners: 19 "All in all, I trust that it is clear from what is 20 set out above that MTR has already taken significant 21 steps and is in the process of taking yet further steps 22 to improve its project managements systems." 23 Now, what I'd like to ask you: what steps are the 24 MTR in the process of taking, at this moment in time, to 25 improve its project management systems?</p>	<p>1 six -- and digitalisation; I mentioned that, yes -- and 2 the PIMS review, that was the sixth. 3 What we've done is put a complete formal body around 4 not just taking these recommendations forward but 5 looking forward into the projects that are coming in the 6 future to make sure that we are absolutely fit and ready 7 for them when they come along. 8 Q. That sounds good to me. 9 Dr Ewen, what's going to happen now is that my 10 learned friend Mr Ian Pennicott I suspect has a few 11 questions for you. Then various lawyers in the room get 12 the opportunity to ask you questions. The learned 13 Commissioners can ask you questions at any time they 14 like. Then it may well be that, at end of the process, 15 I'll have a few more questions for you to conclude. Do 16 you understand that? 17 A. I'm okay with that. 18 MR BOULDING: Please sit there. 19 Examination by MR PENNICOTT 20 MR PENNICOTT: Dr Ewen, good morning. 21 A. Good morning. 22 Q. As Mr Boulding has just indicated, my name is Ian 23 Pennicott, I'm one of the counsel to the Commission, and 24 I do have a few questions for you, but not an enormous 25 number.</p>
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<p>1 A. I think, at the lower levels -- I think I've mentioned 2 it somewhere in this report -- for example, there are 3 a number of recommendations on PIMS. We decided, having 4 looked at it again, that we should do a full and 5 comprehensive review of PIMS and that we would get 6 external expertise in to help us do that. That was 7 beyond the recommendations but it was something that we 8 felt we should do. 9 And in terms of the digital piece, we are also going 10 beyond what we've just got now. We are looking at how 11 we are going to really try and become a leader in the 12 use of digital tools in project management. 13 I think another point I'd like to add is that in 14 order to achieve all that, we've put various taskforces 15 in position, as you've seen from my statement, but we 16 are just in the process of formalising again, which 17 actually we have got a proper project board, co-chaired 18 by myself and the new projects director who has recently 19 arrived. 20 Q. Who is that? 21 A. Roger Bayliss. That's got a PMO, a project management 22 organisation office, that goes with that. Under that, 23 we have six properly constituted projects with project 24 initiation documents, covering digitalisation, quality, 25 governance, contracting, competence -- I think that's</p>	<p>1 Dr Ewen, you have been the engineering director at 2 the MTRC since February 2016, you tell us? 3 A. Yes. 4 Q. Were you with the MTR in some other capacity before that 5 or -- 6 A. No, I wasn't. 7 Q. Where were you before you joined the MTR in February 8 2016? 9 A. The bulk of my career, 39 years, was in the Royal Air 10 Force as an aeronautical engineer. I then served 11 a small amount of time in purdah, just doing 12 contracting, because of the previous job I had. I then 13 -- Airbus invited me to join them and I started there 14 for a few months but then I had the opportunity to come 15 to MTR and it was an opportunity I didn't want to pass 16 up so I came out here. 17 Q. That's very helpful. Thank you very much. 18 We've read obviously in your witness statement about 19 your academic background and your professional 20 qualifications, but as I understand it you are not 21 actually a civil or structural engineer per se? 22 A. Correct. 23 Q. And as I think you just indicated, your primary interest 24 is aeronautical engineering; is that right? 25 A. Correct.</p>

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<p>1 Q. But can I ask you this: in paragraph 8 of your witness 2 statement -- that's at page 5154 -- you make the point 3 that you weren't involved in the preparation of the 4 stitch joint and the shunt neck joint reports, and 5 therefore not privy to the subject matter of the same, 6 and accordingly, without the benefit of reviewing all of 7 the relevant evidence, you are not in a position to 8 comment upon specific project management issues arising 9 from the works in the NAT, SAT or HHS. 10 But would I be right in thinking that you would feel 11 comfortable in commenting upon the overall procedures 12 that should have applied when the stitch joint work was 13 carried out? 14 A. The details of what should have happened at the time, as 15 I was not there, would be a little bit more difficult, 16 but I will try and answer as much as I can. I think 17 where I would feel more comfortable, to use your words, 18 would be what we have done and how we can assure 19 ourselves in the future. 20 Q. Right. 21 A. If I may add, I may not be a civil engineer but I have 22 an extensive experience in quality, and my last-but-one 23 job in the Royal Air Force was responsible for all 24 quality and engineering, as Chief Engineer for the Royal 25 Air Force Air Command.</p>	<p>1 any particular problem regarding RISC forms? Would that 2 be right? 3 A. That is correct. My -- although they call me 4 engineering director, I have no visibility on the 5 quality processes. I didn't; I now have. I didn't at 6 the time. I was really brought in to look at cost and 7 schedule and new projects. 8 Q. Right. I appreciate -- we saw the organisation chart 9 with Mr Boulding just a moment ago, with you at the 10 left-hand side and all the other directors running 11 alongside. This is perhaps a difficult question, but 12 would I be right in thinking that that sort of problem, 13 the RISC problem, would not have got up to director 14 level generally? It didn't get to you personally but 15 you hadn't heard about it from any other directors? 16 A. I certainly hadn't heard about it, and I'm unaware of 17 anybody else at director level that knew about it. 18 Q. Okay. Do you think that sort of problem should perhaps 19 have been elevated to director level, or do you have 20 a view about that? 21 A. I think so. Not every RISC form that is missing, but 22 clearly there were quite a few missing, and at that 23 stage I think we should have had a measuring system in 24 place and a monitoring system in place that would have 25 taken that information up to the highest level.</p>
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<p>1 Q. Right. That's helpful. 2 One of the points I'm going to be coming on to in 3 a moment, Dr Ewen, is that -- as you are aware, one of 4 the primary topics that this part of the Commission is 5 interested in is the interface issues, and in the stitch 6 joints in particular. What I'm going to be interested 7 in, in a moment, is to what extent the various measures 8 that we know the MTR has implemented over the last, 9 let's say, six months, a year or whatever -- to what 10 extent those matters may assist with interface matters. 11 Do you see the point? 12 A. Mmm. 13 Q. I'll come to that in a moment. 14 But first of all can I just ask you a factual 15 question, if I may. 16 A. Mm-hmm. 17 Q. We've heard, we've just heard, from Mr Kit Chan, who was 18 the construction manager for the project up to May 2016. 19 It's clear that Mr Chan was well aware of a problem with 20 RISC forms while he was in his post. 21 A. Mmm. 22 Q. You overlapped with him for three months, in the sense 23 that you joined in February 2016; he left in May 2016. 24 Would I be right in assuming that you, at director 25 level, engineering director level, were not informed of</p>	<p>1 Q. So you personally would regard that as a sufficiently 2 important or serious issue that perhaps should have 3 reached director level? 4 A. Yes. 5 Q. Can I ask you this. I appreciate again your position as 6 engineering director. But can you tell us -- if you 7 can't, just say so -- when somebody like Mr Kit Chan, 8 construction manager, a fairly senior position, is 9 replaced by somebody else, in this case Mr Michael Fu in 10 May 2016, is there a set process or procedure that the 11 MTR has in place whereby the incoming person is briefed 12 by the outgoing person with regard to any particular 13 problems or issues that exist at the time of handover? 14 A. I can't talk about the specifics there. As a general 15 rule though, in my time at MTR, we, whenever possible, 16 try and arrange a handover period, to try to ensure that 17 those discussions have happened, and certainly, in the 18 military, you used to move on every two years so there 19 is always a handover period, you always had to have 20 that, so it is something I would advocate. I do not 21 know in this specific example if that happened. 22 Q. No, but is there any written documentation, any 23 procedure that one can refer to, as to what should take 24 place during the handover period? 25 A. Not that I'm aware of, other than normal induction</p>

<p style="text-align: right;">Page 57</p> <p>1 training.</p> <p>2 Q. So would this be right: there is nothing in particular</p> <p>3 in writing about what should happen in a handover</p> <p>4 period; it's very much up to the individuals concerned?</p> <p>5 Would that be right?</p> <p>6 A. As far as I'm aware, yes.</p> <p>7 Q. All right.</p> <p>8 Can I ask you, please, to look at paragraph 4 of</p> <p>9 your witness statement. You say there, or identify in</p> <p>10 that paragraph, the various requests that were made by</p> <p>11 the Commission's solicitors --</p> <p>12 A. Mm-hmm.</p> <p>13 Q. -- in a series of letters. The first one that you</p> <p>14 identify is request no. 1.21.7. Do you see that?</p> <p>15 A. Yes.</p> <p>16 Q. And you have helpfully identified or set out a number of</p> <p>17 the particular requests in your appendix.</p> <p>18 If we could go to 5177, this is 1.21.7, where the</p> <p>19 request is this:</p> <p>20 "MTR appears to rely entirely on Leighton to give</p> <p>21 notice of RISC form inspection and if such notice is not</p> <p>22 served, RISC form inspection would be missed. Describe</p> <p>23 and explain the system and procedures in place (if any)</p> <p>24 whereby MTR could ensure that the RISC form inspections</p> <p>25 would not be missed (regardless of whether a notice of</p>	<p style="text-align: right;">Page 59</p> <p>1 A. I can't be certain because it is an area of the business</p> <p>2 that at that stage I was nowhere near.</p> <p>3 Q. Right.</p> <p>4 A. As I said earlier on, I'm trying to be part of the</p> <p>5 solution, and I'm not trying to shirk responsibility for</p> <p>6 what happened. I'm just saying that I wasn't there so</p> <p>7 I can't 100 per cent give you an answer.</p> <p>8 Q. Yes. All right. But it's interesting, your answer to</p> <p>9 what is now being done is interesting, because it did</p> <p>10 strike me that of course one way of ensuring that you</p> <p>11 didn't miss an inspection, a hold-point inspection,</p> <p>12 would be to prepare a list before the works actually</p> <p>13 started, a schedule of those RISC forms or hold-point</p> <p>14 inspections that you would expect in a particular area</p> <p>15 of the site, and that's essentially what is now being</p> <p>16 done?</p> <p>17 A. Yes, I would agree.</p> <p>18 Q. Okay.</p> <p>19 Now to come on to the point I mentioned earlier.</p> <p>20 You say you deal with request no. 1.29. Could we just</p> <p>21 look at request 1.29 at page -- in your appendix, and</p> <p>22 that's at 5177. The request was:</p> <p>23 "Explain and confirm whether, in the opinion of MTR</p> <p>24 as project manager of the SCL project, steps and</p> <p>25 measures could have been taken to avoid the issues which</p>
<p style="text-align: right;">Page 58</p> <p>1 inspection has been served by the contractor)."</p> <p>2 Dr Ewen, without wishing to sound critical, I don't</p> <p>3 think you have actually dealt with that, have you, in</p> <p>4 your witness statement?</p> <p>5 A. I've dealt with how we have resolved this issue.</p> <p>6 Q. Yes.</p> <p>7 A. In terms of we now agree, in the ITP, all the</p> <p>8 inspections that should happen, and that we then track</p> <p>9 that. We are trying at the minute -- not trying --</p> <p>10 developing a tool called iRISC that will enable that all</p> <p>11 to happen automatically. At the minute it's done</p> <p>12 manually. So we do now have a tracking mechanism where</p> <p>13 we understand how many RISC forms should be raised, and</p> <p>14 also against those any changes that happen and change</p> <p>15 variation, because sometimes there are changes and we</p> <p>16 just need to understand why. Then at the end of that,</p> <p>17 before we close anything out, would be understanding</p> <p>18 that they have all been delivered. So we have that in</p> <p>19 place now.</p> <p>20 Q. But I think you accept -- and I understand all of that,</p> <p>21 that's helpful -- but at the time, spinning back to</p> <p>22 2016-2017, my understanding is there was no system or</p> <p>23 procedure in place which ensured that a hold-point</p> <p>24 inspection would not be missed if the contractor failed</p> <p>25 to issue a RISC form. Would you agree with that?</p>	<p style="text-align: right;">Page 60</p> <p>1 have arisen in relation to the three stitch joints and</p> <p>2 if so, describe the steps and measures."</p> <p>3 Now, would I be right again in suggesting that you</p> <p>4 have not specifically addressed the question as to what</p> <p>5 steps and measures could have been taken to avoid the</p> <p>6 issues at the three stitch joints?</p> <p>7 A. Correct.</p> <p>8 Q. What we have heard from Mr Holden of Leighton and Mr Fu</p> <p>9 from MTR is one practical step that might have been</p> <p>10 taken is the production of a detailed method statement</p> <p>11 and presumably that's something you would agree with?</p> <p>12 A. Yes.</p> <p>13 Q. That's a practical step?</p> <p>14 A. Mm-hmm.</p> <p>15 Q. We know that that was done for the remedial works and</p> <p>16 that would be one practical step. Can you think of any</p> <p>17 other practical steps that might have been helpful?</p> <p>18 A. And again I'll refer to the things we are now putting in</p> <p>19 place.</p> <p>20 Q. Please do.</p> <p>21 A. On the basis of if they were in place -- if we had put</p> <p>22 them in place to resolve an issue, potentially that</p> <p>23 would have resolved the issue.</p> <p>24 Q. Yes.</p> <p>25 A. So I think there are a number of angles for this. One</p>

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<p>1 is an assurance thing. And bad quality is not 2 inspected. Anyone who understands quality will tell you 3 that. So it is a case of ensuring the right competency 4 and the right resources are available to do the job in 5 the first place. So it's a combination of ensuring that 6 they are in place, and then an assurance regime that 7 comes and checks and makes sure that those are all 8 happening and delivering what they should do; and, if we 9 find they are not delivering what they should do, 10 getting to the root cause to ensure that it's done right 11 first time.</p> <p>12 Q. All right. That ties in to request 2.23, which is the 13 next one on your appendix 1: 14 "In the light of issue 1 and issue 2, there appears 15 to be recurrent materials mismatches, construction and 16 communication problems concerning structures at contract 17 interfaces. Describe and explain the measures and 18 improvements which MTR as project manager will take to 19 ensure that these problems will not occur again." 20 Now, the focus of that question was contract 21 interfaces, as we've seen, and obviously that's 22 an indirect reference to the stitch joints --</p> <p>23 A. Yes.</p> <p>24 Q. -- and the shunt neck joint. 25 Can I ask you to try to be a bit more specific --</p>	<p>1 focused management on those interface issues is 2 desirable?</p> <p>3 A. Absolutely. And again, referring back to my previous 4 answer, having a separate assurance team who are present 5 at the workfront and not just in the back office, 6 watching to understand that all these things are being 7 undertaken and implemented correctly, is a way of 8 assuring that.</p> <p>9 Q. Right. So, if I can summarise it in this way, Dr Ewen, 10 the items that perhaps were in place for interface 11 matters when the stitch joints, the original stitch 12 joints, were constructed, were first of all -- I don't 13 know if you've seen it -- but there's an appendix Z2 to 14 the contract which deals with interface requirements, 15 specific interface requirements.</p> <p>16 A. I'm not aware of it but I'm not completely au fait with 17 it.</p> <p>18 Q. There was a contract specification for interface 19 matters. We know that there were interface meetings 20 between the contractors and MTR. You now would add to 21 that, as I understand it, the assurance team that you 22 have spoken about, and BIM.</p> <p>23 A. Yes.</p> <p>24 Q. So those are two add-ons -- 25 A. Yes.</p>
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<p>1 A. Yes.</p> <p>2 Q. -- in relation to your last answer, and identify, if you 3 can, for us those measures that are being taken by the 4 MTR which would have a specific, hopefully, improvement 5 with regard to interface issues.</p> <p>6 A. Yes, you can. I think, to be as specific as possible, 7 the introduction and utilisation of BIM, with a single 8 commendatory environment which we have already put in 9 place, is probably the best way of identifying any 10 interface issues, because everybody is working from the 11 same set of drawings. Any changes or alterations would 12 automatically get seen and we can track everything that 13 goes through that.</p> <p>14 So I would say, specifically for the interface 15 issues, and I was giving a more general answer before in 16 terms of the assurance process --</p> <p>17 Q. Yes.</p> <p>18 A. -- I would say that the introduction of BIM would be the 19 most effective way of dealing with that issue.</p> <p>20 Q. Okay. Because presumably you would agree with the 21 general proposition that interface risks are an item of 22 work that does pose something of a risk to successful 23 project delivery?</p> <p>24 A. Agreed. Agreed.</p> <p>25 Q. And therefore, as a consequence of that, careful and</p>	<p>1 Q. -- to what was there in the first place? 2 A. Correct.</p> <p>3 Q. I see. That's very helpful. 4 Can I then please ask you a few questions about the 5 WSP audits --</p> <p>6 A. Yes.</p> <p>7 Q. -- which you refer to in your witness statement. 8 You start dealing with that at paragraph 11 of your 9 witness statement, and you refer to the fact that WSP 10 has been retained as an independent audit consultant to 11 carry out an audit of, amongst other things, the 12 structures at NAT, SAT and HHS to check if the 13 construction works were properly inspected.</p> <p>14 A. Correct.</p> <p>15 Q. At paragraph 15 of your witness statement, you say: 16 "Insofar as NAT is concerned, the audit scope covers 17 the new stitch joints completed in 2018 but not the 18 initial stitch joint construction nor the foundation and 19 piling works for contract 1112." 20 Why does the audit not include the initial stitch 21 joint construction, Dr Ewen?</p> <p>22 A. Because I think the aim of the audit is to ensure the 23 structure is safe, as opposed to any historical looking 24 at, for whatever reason. 25 So my concern is have we got enough inspections to</p>



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<p>1 ensure that the NAT is safe? So going and investigating 2 what happened and has been replaced seems to me a sort 3 of pointless exercise. 4 Q. Okay. And my understanding is that one of the purposes 5 of the WSP audits is that the findings in those audits 6 will feed into the verification report that is being 7 prepared and hopefully submitted in the not-too-distant 8 future? 9 A. Correct. 10 Q. Can I then just ask you to look at paragraph 16(2) of 11 your witness statement, where you explain -- just 12 picking it up above, where there's (i), (ii), 13 et cetera -- you say: 14 "After valuation by the WSP audit team, each 15 essential hold point for the NAT and SAT structures was 16 assigned a colour (red, yellow, or green) signifying the 17 audit outcome." 18 If we can go down to "Green", please, you say: 19 "Where there were relevant supporting materials and 20 such materials were deemed sufficient by WSP to evidence 21 that site inspection of the relevant element of the 22 works and hold point had taken place such that it could 23 be accepted in lieu of the RISC form being presented for 24 audit or where the form contained significant 25 inconsistencies."</p>	<p>1 just a case of a RISC form was missing, a RISC form was 2 not filled out as well as it should have been, they also 3 treated that as a requirement for needing extra 4 supporting evidence. So it wasn't a tick-box exercise. 5 Q. Understood. That's helpful. 6 Then, lastly from me, Dr Ewen, this was not 7 something I had on my agenda but it's something that's 8 arisen during the course of Mr Chan's evidence, so I'm 9 just going to take the opportunity of asking you while 10 you are here -- presumably you are familiar with PIMS? 11 A. Reasonably, yes. 12 Q. Okay. Do you know anything about the topic of how long 13 documents are supposed to be kept when a project 14 concludes? 15 A. "Documents" being which documents? 16 Q. Any sort of documents, to start with. 17 A. Well, it varies. There are some documents that legally 18 have to be kept for a set period of time, and other 19 documents where we would wait until the project 20 completion, safe and sound, or BD acceptance, and at 21 that stage would -- there is no requirement to keep the 22 documents any further. 23 Q. Let me see if I can tease a little bit more. 24 A. Yes, sure. 25 Q. Can we look at B3, that's the original bundles, 1072,</p>
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<p>1 Can I ask you this, Dr Ewen: do you know whether the 2 WSP audit reports check not only that the inference can 3 be made that the inspection took place but that the 4 inspection was carried out by an appropriately qualified 5 and experienced person by reference to the site 6 supervision plan? 7 A. I would struggle on the second part. My assumption is 8 so but I haven't specifically asked that. I'm aware 9 that -- and so I think I would assume so because the 10 role was to say, "Are you happy that the inspections 11 have been carried out correctly?" And so there's 12 an assumption there. But I can't, I'm sorry, give you 13 100 per cent -- 14 Q. That's all right. It's just that it wasn't clear to us 15 whether or not -- it was not just trying to establish 16 that the inspection had properly been carried out -- 17 A. By the right person. 18 Q. -- but by the right person. 19 A. I think implicit -- it would be yes, but unless I've 20 actually seen it in writing, I wouldn't want to try and 21 speculate in any way. 22 Q. All right. 23 A. Because I know that the inspections and the criteria set 24 by WSP were very strict, and it was a case of, you know, 25 two supporting pieces of evidence, and it also wasn't</p>	<p>1 please. 2 This I think is, I hope, part of the PIMS document. 3 It we look at 5.4 -- do you see the heading, 4 "Documented information"? 5 A. Yes. 6 Q. Then in the third paragraph it says this: 7 "Procedures and practice notes identify the records 8 to be maintained by the projects division throughout the 9 duration of a project to provide evidence of conformity 10 to requirements and the effective operation of the 11 PIMS." 12 And so forth. Now, does that give us a lead as to 13 where we should be looking, that is the procedures and 14 practice notes, to identify the records to be 15 maintained? I say "maintained" -- presumably that has 16 two potential meanings. One is maintained through the 17 course of the project, and be one possibly "maintained" 18 ie retained thereafter. 19 A. Mmm. 20 Q. Are you familiar with the procedures and practice notes? 21 A. Not to the extent that I can give you a good answer. 22 MR PENNICOTT: All right. That's fine. I thought I would 23 ask anyway. 24 Thank you very much. 25 Sir, I have no further questions for Dr Ewen.</p>

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<p>1 CHAIRMAN: Thank you very much. 2 MR TSOI: We have no questions. 3 CHAIRMAN: Thank you. 4 Cross-examination by MS PANG 5 MS PANG: Good afternoon, Dr Ewen. 6 A. Good afternoon. 7 Q. I represent the government and there are just a couple 8 of questions that I would like to explore with you. 9 But before that, I'd like to follow up on 10 Mr Pennicott's last question, because those instructing 11 me have very helpfully identified several performances 12 in the PIMS which may be relevant to the issue of 13 record-keeping. 14 Can I just for the record read out the transcript -- 15 the reference to the document, so that we can have 16 a proper record. It's page B3/1354, clause 10.3 might 17 be relevant. Then page 1355, clause 11 might be 18 relevant. 19 There's one particular provision I would like to ask 20 Dr Ewen to look at, to see whether it rings a bell. 21 It's on page B1350, clause 3.6. 22 This is the provision that we can identify that 23 might be most relevant. It reads: 24 "Staff involved in projects managed by Projects 25 Division shall, by making reference to [something</p>	<p>1 measures that you have mentioned in your witness 2 statement regarding training on PIMS. Perhaps we can 3 start by taking a look at paragraph 30 of your witness 4 statement. The reference is BB5160. That's very quick. 5 We see that at paragraph 30 you talk about several 6 different tiers of documents, of PIMS documents, 7 including manuals, procedures and practice notes. 8 I would like to ask you about the PIMS training 9 because I've tried to take a look at the PIMS documents 10 myself, which is in bundle B3, and I found there are 11 about 700 or 800 pages that I'm given, so I'm just 12 wondering, can you tell us, before the improvement 13 measures, what training would MTR staff receive on PIMS 14 and what happens now? 15 A. Okay. I can't answer the first but the second I can, 16 and that is that all the frontline staff have had 17 a refresher training on PIMS, and part of our process is 18 anybody that's new into the area will have a training -- 19 will have training on PIMS. 20 One of the other things we have added in is as a 21 project goes through different phases -- because, as you 22 say, there's an awful lot of documents in there; trying 23 to retain all of those is perhaps quite difficult. 24 So as someone goes from one stage, say from 25 excavation, when we will concentrate the training on the</p>
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<p>1 called] project records and retention schedule [which we 2 cannot identify in the bundle] attached to practice 3 note ..." 4 Then subparagraph (a) says: 5 "use of ePMS, DMS or other electronic document 6 management systems to capture, share, store, control, 7 manage and archive all incoming and outgoing 8 workflow-related documents and drawings throughout and 9 beyond the project period in accordance with appropriate 10 procedures/manuals ..." 11 So I'm wondering if, after reading this clause, does 12 it ring a bell or do you have any idea how long the 13 documents might be stored or where could we look for the 14 relevant provisions? 15 A. I'm of course aware of ePMS, and that is sort of the 16 main document storage area, but, as I said before, the 17 specific breakdown of the length of retention for the 18 various records, depending on those records, I'm not 19 cited on. 20 Q. I see. So you think the document project records and 21 retention schedule might give us that breakdown that you 22 just mentioned? 23 A. Reading that, it would suggest it would. 24 Q. Thank you very much. 25 I would now like to explore with you the improvement</p>	<p>1 excavation area, if then it goes to the actual building 2 area, then we would go back for retraining on that 3 specific area. So it's progressive training through 4 rather than expecting somebody to adopt the whole of 5 PIMS in their head the whole time. 6 Q. I think we've heard from an MTR engineer who told us 7 that she might have received training on PIMS when she 8 joined MTR as a graduate engineer, and her evidence was 9 to the effect that she only had a one-hour training on 10 PIMS. 11 Can you confirm if that's what would generally 12 happen to new staff joining MTR? 13 A. I think, if she said that, I have no reason to 14 disbelieve her. 15 Q. I see. How long would the refresher course on PIMS -- 16 how long are they? 17 A. I'm not sure. I don't deliver it. It's not in my area. 18 All I'm aware of is they put the training in place. 19 Q. And that would be training on the general PIMS, not the 20 project-specific ones; right? 21 A. I don't really understand your question. 22 Q. Perhaps it might be me who misunderstands what's being 23 explained. Can I ask you to look at paragraph 29 of 24 your witness statement. 25 A. Sure.</p>

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<p>1 Q. I think here you mention: 2 "... project-specific management plan ... which, 3 amongst other things, identifies how standard practices 4 defined in the PIMS will be applied to SCL specific 5 requirements (including the requirements of the 6 government as the client) ..." 7 So my understanding is that there would be a set of 8 general PIMS, and then for a specific project there 9 would be project-specific PIMS or project management 10 plan. So the training we were just talking about, 11 that's the general one? 12 A. No, training is actually for the relevant project. 13 Q. Ah, I see. 14 A. Because, for example, if it's a concession project 15 versus an ownership project, if a person is working on 16 a concession project, there's not really a lot of point 17 in teaching him the PIMS requirements for an ownership 18 project. So we obviously target the training 19 accordingly. 20 Q. So am I right to say that the enhanced training that has 21 been implemented recently, they are only on 22 project-specific management plans and not on the general 23 MTRC training? 24 A. I can't answer that. I mean, I can tell you what is put 25 in place, but if something else has been put in place</p>	<p>1 not refer to the project-specific management plan, but 2 I think that probably doesn't affect the answer that 3 you've given to us; right? 4 A. No. Just to go back to the reason I can't answer the 5 "does it contain any general" is because during the 6 training they may refer to a general PIMS requirement 7 and then show how that's applicable to this project. 8 Because I haven't done the training myself, I don't know 9 if that's happened or not. 10 Q. I see. 11 During the course of this Inquiry, we've also heard 12 evidence from I think probably the same MTR engineer who 13 is responsible for rebar inspection -- hold-point 14 inspection for rebar installation, and she told us that 15 she actually did not receive any training on how to 16 conduct inspection on coupler installation. 17 So how would this type of situation be prevented 18 under the new training system? 19 A. Because part of that training system should be for 20 coupler installation. I have to say, I'm not -- it 21 maybe should be a quick explanation, but for me, I'm 22 just an aircraft engineer. You know, having a female 23 portion and a male thread that goes in it and tightens 24 up, I don't know if that got to be a long, long training 25 course.</p>
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<p>1 without my knowledge, I don't know. 2 Q. Can you tell us if the training would cover specific 3 requirements of the client, such as, in this particular 4 project, we know that there's a requirement called 5 quality supervision plan for installation of couplers. 6 So would things like that be covered in the enhanced 7 training? 8 A. I think, as I say in my statement, I'm aware the 9 training is undertaken. I have not undertaken that 10 training myself and I have not delivered that training 11 myself. So getting into details of what is said and 12 what isn't said, I think I'm not in a position to. 13 Q. Sorry, just to make sure I understand, the 14 project-specific management plan that we've been talking 15 about, that basically incorporates part of the general 16 PIMS requirement, and then you also incorporate into 17 that specific requirements from the client? Is it 18 accurate to describe it this way? 19 A. That is my understanding, yes. So you have a general 20 PIMS which covers all sorts of different types of 21 projects. Out of that, you then put your specific 22 project management plan that is bespoke for that 23 project, and then you train towards that project. 24 Q. I've just been informed by my learned friend that the 25 reference here at paragraph 29, B3/1774, actually does</p>	<p>1 Q. Can I take you to paragraph 55 of your witness 2 statement, which is about the iRISC. Here you describe, 3 basically, I think an electronic version of the RISC 4 form process. So I'm just wondering how this system 5 interacts with the contractor's system, because we've 6 heard evidence that I think the RISC form is generated 7 by Leighton's INCITE system, then passed on to MTR, but 8 now that you have this new system in place, how does it 9 work together with the contractor's system? 10 A. Okay. So the current system has just been taking what 11 is a quite extensive process and tried to digitise -- 12 and digitised it. So it works on translating manually 13 from the ITP into the system. The ITP has to be agreed 14 with the contractor. 15 Now, the contractor's system, to get to that stage, 16 as far as the contractor is concerned, as long as we 17 agree an ITP with a list of RISC form requirements. And 18 as I said earlier on, what we are now trying to progress 19 is to try and make that, rather than just a manual swap, 20 to actually integrate that into a complete database set, 21 but that's taking a bit more time. 22 Q. But in this case, we see that there will be occasions 23 where there are two different versions of a RISC form, 24 but the system should be able to prevent that from 25 happening, so there would only be a unified copy of the</p>

Page 77	1 RISC form? 2 A. Correct. 3 Q. I think I have one last question for you. The problem 4 that we see in this case, one of the reasons why there 5 is such a large volume of missing RISC forms is that 6 some of the frontline staff may decide on their own that 7 they can sort of relax the PIMS requirement. So how 8 does the new system that is now being implemented 9 prevent a frontline staff from departing from the PIMS 10 system on his own? 11 A. Okay. I now refer back to probably about my second or 12 third answer that I gave earlier on. For me, a quality 13 system is a combination of two things: enabling the work 14 to be done in the most efficient and effective way; and 15 secondly assuring that that then is being done. 16 So, from our point of view, we are trying to 17 simplify it, using digitalisation. It's still a complex 18 process, as you can see, it's still a clumsy process, 12 19 steps, which is an awful lot of steps for an inspection. 20 So we want to simplify that, we went to make it more 21 efficient, more effective, so it makes it easier for the 22 people to undertake the work and to do the work 23 correctly. 24 In addition, we have an assurance process, and by 25 the way we will be measuring on our dashboard the	Page 79	1 process will include audits, absolutely, but it will 2 also include having people doing M&V, measurement and 3 verification, actually on site. 4 So it's a combination of a number of things, 5 assuring that what's supposed to be done is being done, 6 and I emphasise again that it's actually having the 7 desired effect. 8 Q. Sorry, just one follow-up question. You have mentioned 9 in your answer that this now will include quality, so 10 am I right in understanding that before that there would 11 not be audit process that focused on quality but the 12 focus would primarily be cost and programme? 13 A. You are correct. What I said is my responsibilities as 14 a second line of defence were cost and schedule. The 15 quality team was in the project delivery area. 16 MS PANG: I see. I have no further questions. Thank you 17 very much, Dr Ewen. 18 WITNESS: Thank you. 19 Questioning by THE TRIBUNAL 20 COMMISSIONER HANSFORD: I have one or two, actually, 21 Dr Ewen. 22 You mentioned that the WSP audit would provide 23 assurances that the structure is safe -- 24 A. Mmm. 25 COMMISSIONER HANSFORD: -- or contribute to that assurance.
Page 78	1 numbers of RISC forms, number open, on a regular basis. 2 So that information is freely available to us as 3 an assurance team. And in addition to which the 4 assurance team has to go and check that not just the 5 RISC forms are there but they've actually been 6 appropriately filled out by the right people, going back 7 to a previous question, that it's not just a tick-box 8 exercise, that actually the RISC form is doing the job 9 it's supposed to do. So that's what we will put in 10 place in the future. 11 Q. So the second element that you are referring to is 12 essentially an audit? 13 A. We have set up -- and this is an area where I am close 14 into, because I'm in a separate division. Part of that 15 division, part of my responsibilities is for a check and 16 balance; we call it a second line of defence. The 17 second line of defence over the last three and a half 18 years since forming the division has been schedule and 19 cost. That now will include quality. 20 So that assurance process from the quality team, 21 which is an additional team, we haven't taken a team 22 from elsewhere, so we haven't robbed Peter to pay Paul. 23 This is extra resources being put in, and there we 24 already have a fully qualified quality manager that we 25 have recruited from Crossrail. And their assurance	Page 80	1 A. Yes. 2 COMMISSIONER HANSFORD: Would you accept that safety and 3 serviceability are not actually exactly the same thing? 4 A. Correct. Yes. 5 COMMISSIONER HANSFORD: Will it also provide assurance that 6 the structure is serviceable? 7 A. Yes, I think it will, yes. It wasn't the primary aim 8 for it, but yes. Because if we understand it, the 9 inspections were done correctly, then implicit in that 10 would be that it should therefore be serviceable as 11 well. I was emphasising safety, but perhaps my language 12 could have been better. 13 COMMISSIONER HANSFORD: Okay. Understood. Thank you for 14 that. 15 You've had a number of questions about the storage 16 of quality records -- 17 A. Yes. 18 COMMISSIONER HANSFORD: -- which is perhaps not surprising 19 as we've been focusing on that a little bit today. But 20 I just want to take you to the future system, the 21 digitised system. How will the quality records -- or, 22 rather, for how long will the quality records be 23 retained in the new system? 24 A. We would do that in accordance with the current 25 requirements within PIMS. I think there is also a time

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<p>1 for reflection, to say: has this process, the COI 2 process, shown something that we need to reflect and 3 change? And I think we would do that. 4 So, for example, if the RISC forms are: as soon as 5 you've got sign-off from BD we get rid of them, maybe we 6 should consider that we keep them for a period of time, 7 and of course because it's digitised, that is so much 8 easier now, and because they are all put into one place 9 automatically anyway, why should we not keep them? It 10 would make sense to. 11 COMMISSIONER HANSFORD: And would you see the RISC forms, 12 and I still use the word "form" even though it's 13 digitised -- 14 A. Yes. 15 COMMISSIONER HANSFORD: -- would you see them as part of the 16 quality records? 17 A. Yes. 18 COMMISSIONER HANSFORD: You would? Okay. 19 And a final one, it's a very small point actually, 20 but it's on paragraph 86 of your witness statement and 21 it's the final sentence. 22 I don't wish to be picky. It says: 23 "It is anticipated that this external consultancy 24 contract will be awarded in the second half of 2019, 25 with a target for the review to be completed."</p>	<p>1 WITNESS: Thank you. 2 (The witness was released) 3 MR BOULDING: That's the last of MTR's witnesses, sir. 4 CHAIRMAN: Yes. And my understanding was -- open to 5 correction -- that this afternoon there will be a minor 6 hiatus. We will start on Monday; is that right, or have 7 I got it wrong? 8 MR PENNICOTT: No, you have got it exactly right, sir. 9 CHAIRMAN: Okay. And then on Monday? 10 MR PENNICOTT: Yes. Monday we will have, first of all, the 11 two witnesses from Pypun, and then we have three 12 government witnesses to follow. I'm hopeful that we 13 will reach the government on Monday, and with a fair 14 wind, with a bit of luck, we might even manage to 15 complete all five witnesses, Pypun's and government's 16 witnesses, I hope by the end of Tuesday and thereby 17 saving us another day. That's the optimistic view but 18 I hope that that can be achieved. 19 CHAIRMAN: We are looking towards finishing on -- the 20 original scheme was -- 21 MR PENNICOTT: Wednesday. 22 CHAIRMAN: Wednesday. 23 MR PENNICOTT: Yes, and I'm just expressing the optimistic 24 view that we might finish a day early, but obviously we 25 will see how things go.</p>
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<p>1 A. Yes. I understand. 2 COMMISSIONER HANSFORD: Is there something missing? 3 A. No, I don't think so. I think it's more a case of what 4 we actually understand what the contract is in terms of 5 the scope, et cetera, then we will probably have 6 a better understanding of how long it will take, and 7 I also think that with something like this, there may 8 well be a negotiation with whoever wins to work out how 9 long it's going to take as well. 10 This isn't a sort of a standard you've got three 11 months to deliver something. I actually want to get the 12 best I can. So once they come in and assess it, it 13 might take two years or it might take three months. So 14 that's why I don't -- it does read peculiar, I agree, 15 but I don't have a date yet. 16 COMMISSIONER HANSFORD: No, I understand. Okay. Thank you. 17 CHAIRMAN: Yes? 18 MR SHIEH: No questions. 19 MR CLAYTON: No questions. 20 MR BOULDING: No re-examination. 21 Thank you very much indeed, Dr Ewen. 22 I don't know whether you have any further questions 23 before he departs, sir. 24 CHAIRMAN: No. Thank you very much, Dr Ewen. Very 25 comprehensive and very helpful to us. Thank you.</p>	<p>1 Sir, there was a question of some directions which 2 I think you had been given and I think you had approved. 3 CHAIRMAN: I did, yes. 4 MR PENNICOTT: Perhaps I can, as it were, circulate that to 5 everybody during the course of the afternoon, to save 6 you reading it out. It deals with, obviously, the 7 written closing submissions for this part of the 8 Inquiry, the number of pages and the dates, and so 9 forth, but I think everybody can be told that the 10 directions say that the written closing submissions 11 should be submitted by 19 July, and then the 12 Commission's legal team has an extra week on top of 13 that, up to 26 July. But obviously more detail will be 14 in the directions which we will circulate. 15 CHAIRMAN: Yes. Thank you. 16 Good. Thank you all very much indeed. Have a good 17 weekend, and Monday morning, 10 am. 18 MR PENNICOTT: Yes, sir. 19 CHAIRMAN: Thank you. 20 (12.28 pm) 21 (The hearing adjourned until 10.00 am 22 on Monday, 17 June 2019) 23 24 25</p>

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