

1 Tuesday, 24 September 2019

2 (10.02 am)

3 MR PENNICOTT: Good morning, sir.

4 Before we get to the further witness evidence, could
5 I just mention a couple of matters. First of all,
6 a minor error, although probably more important to the
7 person it concerns or the company it concerns.

8 Yesterday, during the course of my procedural update,
9 I inadvertently said that Atkins were both in COI 1 and
10 COI 2. I was wrong. It was pointed out by Atkins last
11 night that they were only in COI 1 and they would like
12 that corrected, so that's what I've just done.

13 Sir, secondly and perhaps rather more relevantly for
14 this week, I have prepared a short opening note in
15 relation to the statistical evidence, and I was
16 proposing to go through that very quickly. It's a short
17 note; it won't take very long.

18 CHAIRMAN: Certainly.

19 MR PENNICOTT: I hope Mr Ng will bear with us.

20 Sir, as we know and as was mentioned yesterday, on
21 18 July 2019, MTR, with the approval of the government,
22 produced the holistic report and the verification
23 report.

24 Having considered those reports, the Commission
25 concluded that it would be appropriate to explore

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1 certain aspects of their content to better understand
2 the conclusions reached in those reports, and in
3 particular the underlying justifications for the
4 intention to carry out what are described in those
5 reports as "suitable measures" to certain of the
6 structures.

7 Sir, it also became apparent to the Commission and
8 its legal team, on detailed consideration of those
9 reports and certainly submissions from Leightons, that
10 the statistical analyses used in those reports were of
11 importance and would likely assist and inform the
12 structural engineering evidence.

13 As a consequence of all that and various directions
14 that I made reference to yesterday, Leighton have
15 produced two reports from Mr Barrie Wells, who we will
16 hopefully be hearing from tomorrow. The government have
17 produced two reports from Prof Yin from the Hong Kong
18 University. And originally MTR produced two anonymous
19 reports on statistical analyses. Subsequently, the MTR
20 informed us that those reports were prepared by MTR's
21 project team, which includes Mr Ng and also Mr Nelson
22 Yeung who would be able to speak to them.

23 Sir, the Commission itself has no statistical
24 expert. I, therefore, make a few observations with
25 a degree of diffidence and caution. Sir, as you know,
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1 when we come to the experts, that is Dr Wells and
2 Prof Yin, the order of cross-examination is going to be
3 altered from its usual practice, and the government,
4 Mr Khaw or Mr Chow, will be cross-examining Dr Wells
5 first, followed by MTR, if they have any questions,
6 followed by myself last; and when Prof Yin comes to give
7 evidence, it will be in the reverse and Mr Shieh will
8 cross-examine Prof Yin first, followed by MTR, followed
9 by me.

10 So, sir, however, despite not having our own expert,
11 we obviously have read, we hope fairly carefully, the
12 reports from Dr Wells and Prof Yin, and would therefore
13 like to make just a few observations of perhaps a simple
14 nature.

15 (A technical break)

16 Sir, turning to what we perceive to be the relevance
17 of the statistical analysis, to the issue of safety or
18 suitable measures, it seems to us that by way of
19 preliminary background and in pretty simple terms, the
20 way it goes is this, that coupler connections were
21 tested by reference to set criteria, which we will come
22 to during the course of the evidence, but in a nutshell
23 no more than two threads and 37 millimetres, a figure
24 that we are familiar with by PAUT test, or
25 40 millimetres by direct measurement.

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1 Having carried out the testing, the failure rates of
2 the coupler connections were recorded and expressed as
3 a percentage of those tested. The failure rates were
4 then translated into what are described as strength
5 reduction factors, also expressed as a percentage. Then
6 the strength reduction factors were utilised to inform
7 the extent of the proposed remedial works to parts of
8 the structures. That's really the process that was gone
9 through. And as explained by the MTR in its report, the
10 statistical analysis adopted what is known as
11 a binomial, that is a pass-or-fail approach or
12 methodology.

13 (A technical break)

14 Sir, that is the basic background, but, as explained
15 by the MTR in their report, which Mr Ng and Mr Yeung
16 will speak to, the general coupler connections at both
17 the EWL and the NSL slabs, resulted in a defective rate
18 or reduction factor of 36.6 per cent and 33.2 per cent
19 respectively; and separately and distinctly the capping
20 beam coupler connections, which are primarily in area A
21 and HKC, but area A is the important one for present
22 purposes -- the capping beam coupler connections result
23 in defective rate/reduction factor of 68 per cent. And
24 it's those percentages, those reduction factors, which,
25 as I say, inform the suitable measures that are going to
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1 be apparently carried out by MTRC.

2 However, sir, so far as one can tell, the
3 statistical analysis for the general coupler connections
4 does not appear to raise any issues of safety or
5 a requirement to carry out "suitable measures" at the
6 EWL and NSL slabs, that is in relation to the coupler
7 connections themselves. There are other issues about
8 the monolithic construction issue that we heard much
9 about in COI 1, but that's a different point.

10 However, sir, for reasons set out in the
11 verification report -- so it's COI 2 -- assuming the
12 general coupler connections in place of lapped bars at
13 the NAT, SAT and HHS, have a similar defective rate or
14 reduction factor, there will be an issue of safety or
15 suitable measures in respect of those areas.

16 Sir, the point here is, as we understand it, that no
17 invasive opening-up has been carried out in those
18 particular areas and no tests therefore have been
19 carried out on the coupler connections in those areas,
20 as we understand it. So essentially an extrapolation is
21 being done from the information gathered from the
22 results that have been obtained in the other areas and
23 applied to those areas. That's as we understand it, in
24 simple terms, how it works.

25 Sir, however, the statistical analysis for the
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1 capping beam coupler connections -- now, the capping
2 beams, you may recall, are largely but not exclusively
3 in the areas HKC, the Coliseum area, and area A. They
4 are not so much in B and C. This gives rise to an issue
5 which I'll mention in a moment or a potential issue that
6 I'll mention in a moment. Sir, the upshot of what has
7 been done by way of testing is that it's been concluded
8 that certain suitable measures at both the EWL and NSL
9 slabs in area A are required. The slight anomaly --
10 perhaps that's not the right word -- the slight oddity,
11 perhaps, is that in fact no testing again has been done
12 in area A. The testing, albeit limited, has been
13 carried out in HKC, the capping beams in HKC, only 11 of
14 them, and two of them have been found defective and some
15 conclusion has been reached as a consequence of that
16 that remedial -- sorry, that's a Freudian slip --
17 suitable measures should be carry out in area A.

18 So testing in HKC; conclusion been reached that
19 suitable measures need to be carried out in area A. No
20 doubt this will be explained to us, how that's all been
21 reached, in due course.

22 As I say, in contrast, there's been no real
23 statistical analysis carried out in respect of untested
24 rebar in NAT, SAT and HHS. In any event, they do not
25 raise any issue of safety or suitable measures.

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1 So far as the position of the statistical analysis
2 is concerned, in the holistic report -- and this all
3 appears to be agreed by Prof Yin, who I think we will
4 discover in due course had a degree of involvement in
5 the statistical aspects of the holistic report --
6 firstly, it is appropriate, he says, to use a binomial
7 approach to analyse the data collected from the
8 opening-up process. So he says binomial approach is the
9 right approach, it having been originally, as we
10 understand it, suggested by MTRC to the government, and
11 indeed, if one goes back further, one sees that that
12 binomial approach was suggested by Arup to the MTRC, who
13 then passed it on to the government. So it appears to
14 have been generated originally by Arup, through MTRC, to
15 the government. That's the binomial approach.

16 Sir, as I mentioned just now, the acceptance and
17 rejection criteria are -- and we heard a lot about this,
18 obviously, during the course of COI 1 -- that there
19 shall be a maximum of two threads exposed on the rebar,
20 and the engagement length of the threaded steel rebar
21 inside the coupler should be at least 37 millimetres, if
22 you are using the PAUT measurement process.

23 As you will recall, sir, some problems with that
24 original process arose and it was modified, and also
25 certain direct measurements have been taken, and when

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1 one is using a direct measurement one is taking
2 40 millimetres; that is, one's not giving the discount,
3 as it were, for the 3 millimetres for the potential
4 discrepancy in using the PAUT method.

5 Sir, adopting -- this is repeating what I have just
6 said -- the binomial approach, applying those criteria,
7 using what is known as a 95 per cent confidence level,
8 which I hope will be explained to us also in due
9 course -- I think I've got a basic understanding but not
10 much more than that -- for the general coupler
11 connections is giving the failures or the failure rates
12 of the percentages that I've mentioned there:
13 36.6 per cent and 33.2 per cent respectively.

14 Dr Wells makes several criticisms of the approach
15 that's been adopted by MTRC and the government.
16 I should say one point that I've not mentioned here, but
17 is perhaps of importance because I will be discussing
18 one aspect of it with Mr Ng shortly, is this: the areas
19 that were tested, locations that were tested, are said
20 to have been randomly selected, and Prof Yin has a very
21 lengthy and detailed, very helpful, explanation in his
22 COI 1 report as to how that selection process took
23 place, who was involved with it and how it came about,
24 and there's a considerable amount of detail in it. But
25 there are certain factual -- and clearly that's

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1 a factual discussion; I mean, he tells us as a matter of
2 fact how the random selection process worked and what
3 input he had into it or he and his colleagues had into
4 it, and what input the MTRC had into it, and how it all
5 worked. There are a couple of aspects of that that
6 I want to address with Mr Ng.

7 I mention that because it appears Dr Wells has
8 doubts as to the randomness of that process, for reasons
9 which he sets out in his report.

10 So that -- sorry, sir.

11 COMMISSIONER HANSFORD: We will address this with Dr Wells,
12 I know: does Dr Wells have doubts about the process, the
13 randomness of the process, or the applicability of
14 a random process?

15 MR PENNICOTT: My understanding is, the way he approaches it
16 is that -- he starts off by saying, "Look, there are
17 175 diaphragm walls -- let's get this around the right
18 way -- without a capping beam, and there are 65 -- 62 or
19 65, it doesn't matter -- diaphragm walls with a capping
20 beam.

21 MR SHIEH: 175 without and 62 with.

22 MR PENNICOTT: 62 with. So there's a ratio of essentially 3
23 to 1, 175 plays 62.

24 However, when the upshot of the testing is that
25 there are essentially 90 locations, 83 of which --

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1 MR SHIEH: 90 samples.

2 MR PENNICOTT: Sorry, yes, 90 samples from the
3 28 locations -- generates 83 without a capping beam and
4 seven with, a ratio of 12 to 1.

5 So he says, "I don't understand how this can
6 possibly be random. As a statistician", he says, "there
7 are serious doubts, given the different ratios,
8 different proportions, as to the randomness of that
9 selection process." That's his point, I think, if I've
10 understood it correctly.

11 COMMISSIONER HANSFORD: Okay.

12 MR PENNICOTT: I've got a feeling there may be an answer to
13 that factually, which I will mention to Mr Ng in just
14 a moment.

15 COMMISSIONER HANSFORD: Okay.

16 MR PENNICOTT: I may not have got it right, I don't know,
17 but we will see if we can explore it a bit with Mr Ng,
18 insofar as he knows anything about the random process
19 and how it was devised.

20 Sir, there are other criticisms made by Dr Wells
21 which I have mentioned here, albeit only in summary
22 form. The next one is this, that by adopting the
23 binomial approach, a rebar coupling connection with
24 37 millimetres or more engaged length is assumed to be
25 fully functioning; 37 millimetres, fully functioning.

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1 But a rebar coupling with, let's say, 34.8 millimetres'
2 engagement length, which Dr Wells has calculated to be
3 the mean for the EWL slab, is only 5.8 per cent less
4 than the engagement length criteria, but it is assumed
5 to bear no load and be completely ineffective.

6 COMMISSIONER HANSFORD: Yes.

7 MR PENNICOTT: So he says, even if you've got one at
8 36.5 millimetres -- so it's just failed by 0.5 of
9 a millimetre -- it's not ascribed any strength at all in
10 this binomial approach because it's simply pass/fail.

11 Now, obviously Prof Yin addresses the complications
12 with doing it in other ways, and no doubt we can explore
13 that with both Dr Wells and with Prof Yin.

14 COMMISSIONER HANSFORD: Yes.

15 MR PENNICOTT: So there is a query about the applicability
16 of the binomial approach by Dr Wells.

17 Dr Wells has, as I say in paragraph 14, carried out
18 some calculations, alternative calculations, using
19 a different methodology, and that reduces the reduction
20 factor by way of a percentage quite considerably. Sir,
21 as I understand it, it is those calculations, or at
22 least some of them, that the government have asked
23 Dr Wells to provide some more information about, and we
24 understand that that information will be provided later
25 today. It was asked for last night but Leightons have

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1 indicated that they will be able to provide it later
2 today.

3 Sir, another criticism that Dr Wells identifies or
4 makes is that within the statistical approach that's
5 been adopted, there are a number of items -- sorry,
6 samples -- which have simply been, for one reason or
7 another, discarded. He suggests that that isn't the
8 correct approach; that they should be given what he
9 calls a missing value; that is, instead of simply
10 discarding samples that can't be measured, for one
11 reason or another, they should be given a value by
12 treating them as -- which is derived from the other
13 figures that give a representative or an expected value.
14 So don't just discard them; work out from all the other
15 information that you have a representative or expected
16 value, and feed that into the equation, rather than
17 simply giving it nothing and just throwing it away.

18 COMMISSIONER HANSFORD: This is the so-called missing value
19 approach?

20 MR PENNICOTT: Yes, sir.

21 Sir, the other analysis -- and it may be there is no
22 actual difference between the experts on the
23 mathematics -- but Dr Wells explains how the reduction
24 factors are fairly dramatically affected, depending upon
25 the engagement length criteria that you take. I've

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1 already mentioned the figures that are derived from
2 using the 37 millimetres. If you take 28 millimetres,
3 which is arguably six or seven threads, depending on how
4 you calculate it, you get much more, as I say -- much
5 less reduction factor as a consequence. That's another
6 point he makes. But, as I say, that's just whether it's
7 right to take 37 millimetres or 32 millimetres or
8 28 millimetres, is clearly going to, as a matter of
9 arithmetic, affect the reduction factor because that's
10 affecting the number of samples that pass or fail; even
11 if you use the binomial approach, you are going to get
12 a different figure.

13 Sir, almost finally, we just draw attention -- and
14 again it may be I want to ask Mr Ng a couple of
15 questions about this shortly -- to the fact that MTR
16 had -- and you will perhaps recall some of this --
17 certain cyclic tension and compression tests carried out
18 after the conclusion of the Original Inquiry hearing,
19 and the MTR's consultants, Arup, have reported and
20 commented upon those tests.

21 We have set out -- and I'll look at this with Mr Ng
22 shortly -- certain observations that Arup have made.
23 They say that, for example, although 37 millimetres is
24 the compliance acceptance criteria, 32 millimetres or
25 seven threads' engagement "can constitute a full

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1 strength connection", and they say "it would be
2 unreasonable not to accept at least 7 thread engagement
3 as an acceptance criterium for a full strength
4 connection".

5 They say, on this basis, the "fit for purpose"
6 criterion has been taken as seven threads or
7 32 millimetres of engagement, albeit that they recognise
8 that the compliance criterion for passing the tests is
9 set at 37 millimetres. And if you apply 32 millimetres
10 of engagement, by calculation, you can arrive at, again,
11 a much-reduced reduction factor of about 12 per cent.

12 CHAIRMAN: Could you give us the bundle reference for the
13 Arup report?

14 MR PENNICOTT: Yes, sir. It's OU6, around about 8 -- the
15 pages I have cited from are at 8260 and 8634, but I will
16 be looking at those in a moment with Mr Ng.

17 COMMISSIONER HANSFORD: So it's the footnotes 23 and 24 in
18 your opening?

19 MR PENNICOTT: Yes.

20 COMMISSIONER HANSFORD: Thank you.

21 MR PENNICOTT: Sir, the last three paragraphs in our note
22 simply refer to the capping beam point and the different
23 figures that are derived from the samples that have been
24 tested in the HKC and applied to area A, and the figures
25 are set out there. I won't read them out.

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1 So, sir, with that very brief and no doubt
2 incomplete introduction, I was going to turn to or allow
3 Mr Boulding to turn to Mr Ng.

4 MR BOULDING: Yes. Good morning, Chairman. Good morning,
5 Mr Commissioner.

6 Mr Ng has been sitting patiently in the witness box
7 listening to my learned friend, no doubt with great
8 interest. I'm now proposing to call him. I understand
9 that he's going to take the affirmation and helpfully
10 give evidence in English.

11 MR NG WAI HANG, NEIL (affirmed)

12 Examination-in-chief by MR BOULDING

13 Q. We know, do we not, Mr Ng, that you prepared a witness
14 statement for the assistance of the learned
15 Commissioners in this particular Inquiry?

16 A. That is correct.

17 Q. If we could go to bundle BB10082, I hope we see the
18 first page of that witness statement; is that correct?

19 A. That's correct.

20 Q. You tell us, do you not, that you are currently the lead
21 project manager for the SCL project?

22 A. Yes, I am the lead project manager for the SCL project.

23 Q. That position, I understand, you took up, what, in
24 January 2019; is that correct?

25 A. That's correct.

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1 Q. If we could go on to the signature page, which we will
2 find at BB10089, do we there see your signature below
3 the date of 23 September 2019, just yesterday?

4 A. That is my signature.

5 Q. Are the contents of this witness statement true to the
6 best of your knowledge and belief?

7 A. They are.

8 Q. Now, it's a convention in this Inquiry that we look to
9 see where you are in the overall MTR organisation.
10 A chart has been located but at the moment it's not
11 found its way into the bundle. I understand that
12 everybody has a copy of it.

13 But do you have in front of you a chart which, in
14 the bottom left-hand corner, is stated to be effective
15 1 August 2019?

16 A. That is August 2019, yes.

17 Q. If we were to go approximately two-thirds of the way
18 along the horizontal axis and look up, do we there see
19 you as lead project manager-SCL civil-NSL, Neil Ng"?

20 A. Yes, that's my name in the box.

21 Q. And that's your location within the overall MTR
22 organisation; is that correct?

23 A. Precisely in this project team.

24 Q. Thank you. Now, what's going to happen now, Mr Ng --
25 you've already got the flavour of how this works --

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1 obviously Mr Pennicott has some questions for you, then
2 various other lawyers in the room will have some
3 questions for you, I suspect; and of course the Chairman
4 and the Commissioner can ask you questions at any time
5 they like, and it may well be at the end that I'll have
6 a few more for you. Do you understand that process?

7 A. I do understand.

8 MR BOULDING: Please remain there.

9 Examination by MR PENNICOTT

10 MR PENNICOTT: Good morning, Mr Ng, and thank you very much
11 on behalf of the Commission for coming along to give
12 evidence this morning.

13 A. Thank you.

14 Q. Mr Ng, you describe yourself as the author -- sorry, as
15 one of the authors of the holistic proposal and one of
16 the authors of the holistic report.

17 Can you just tell us a bit about your role in the
18 authorship of the proposal and the report; what was your
19 involvement?

20 A. First, I would explain about the proposal. I began
21 drafting the proposal in 2018, that's the first
22 revision, as one of the authors for the proposal as
23 well. The proposal eventually found its course from
24 revision A to revision B, to which I was also involved
25 in, for revision B, up to the point of issue -- I recall

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1 it's early December 2018. That is the proposal.

2 As for the report itself, during the course of the
3 execution of the proposal, I kept in touch with the
4 process, and with the team I helped to also draft parts
5 of the holistic report and also review the report
6 itself, and did some editing with the team up to the
7 point of submission.

8 Q. Right. I mean, how many people were involved, from the
9 MTR, in the authorship -- not editing but the
10 authorship -- of the report, in addition to yourself?

11 A. The count itself is not so clear, but I think it would
12 involve people at my level, at the project manager
13 level, also the general manager level, as well as the
14 project director level.

15 Q. So a number --

16 A. Of people.

17 Q. -- of people at different levels?

18 A. Correct.

19 Q. Then as far as the verification proposal and the
20 verification report are concerned, you describe your
21 role there as editor rather than author. Is that
22 correct? Have I understood that correctly?

23 A. That is correct. I believe that's what I stated in my
24 statement as well.

25 Q. Yes. Right. So would that be, if you like, a situation
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1 where you had less involvement than in the holistic
2 proposal and the holistic report? It was very much
3 an editing process?

4 A. That is correct, because the report itself was actually
5 drafted mainly by my other colleagues.

6 Q. All right.

7 Then we know that the reason you are here is that
8 MTR submitted two reports to the Commission in response
9 to a request to deal with statistical evidence, and, as
10 I understand it, you were again involved in the editing
11 of those two reports that have been submitted to the
12 Commission?

13 A. That is correct, as an editor and reviewer, yes.

14 Q. Okay. But you have knowledge of those two reports that
15 have been submitted, to the extent that you've described
16 in your witness statement?

17 A. That is correct.

18 Q. Okay.

19 We know, from the reports, from your witness
20 statement, from Mr Yeung's witness statement, that in
21 I think about December 2018 a task force group was set
22 up. Is that right?

23 A. That is correct.

24 Q. And that comprised representatives of the government,
25 the expert adviser team, the Hong Kong Police Force, and

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1 representatives of MTR; is that right?

2 A. The memberships are about there, correct.

3 Q. As I understand it, you tell us that you very seldom
4 attended the task force group meetings. Is that right?

5 A. That is correct as well. I took the time to go when
6 I had, and also when there are specific issues that was
7 requested of me to be present.

8 Q. Okay. As I understand it, Mr Yeung, however, did attend
9 the task force group meetings on a much more regular
10 basis?

11 A. Yes. I believe he will be able to give more precise
12 answer when he takes the stand.

13 Q. Yes. I do have a few questions about the task force
14 group meetings, so perhaps it would be best if I leave
15 those for him; is that right?

16 A. If you have questions, I will try to answer them as best
17 I can, for the meetings I have attended, just to help
18 the Commission.

19 Q. All right. I will see how we go, but I may leave that
20 for Mr Yeung.

21 A. Thank you.

22 Q. Could I ask you, please, to look at paragraph 9 of your
23 witness statement, where, just above paragraph 9, you
24 have a heading, "The purpose of the holistic and
25 verification proposals/reports", and then you say, "to
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1 ensure the SCL project complies with the code, statutory
2 and contractual requirements"; do you see that?

3 A. I do see that.

4 Q. In the last sentence of paragraph 9, perhaps in
5 repetition of the heading, you say:

6 "The purpose of the holistic proposal/report and
7 verification proposal/report is to ensure the works
8 comply with the relevant code, statutory and contractual
9 requirements."

10 Do you see that?

11 A. I do see that.

12 Q. If we could then look at paragraph 5 of the report for
13 the COI 1 that you've prepared, which should be in
14 bundle ER1 at tab 11, page 2.

15 If we could go to the front sheet, please, just so
16 Mr Ng knows where we are. It's on the screen, Mr Ng.

17 A. Got it.

18 Q. That's the front sheet to the report that was submitted
19 to the Commission.

20 A. Okay.

21 Q. If we go to paragraph 5 on page 2, please. The report
22 says:

23 "It is important to note at the outset that both the
24 holistic proposal and the holistic report were not
25 intended to address issues from only a public safety
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1 perspective. Rather, they were prepared to address the
2 issues and non-conformances identified in the
3 construction of the Hung Hom Station Extension from
4 a code, contractual and statutory compliance perspective
5 with a view to obtaining the requisite approval from the
6 relevant authorities for the completion of the works and
7 subsequent commercial operation of the Shatin to Central
8 Link."

9 So, Mr Ng, is it your understanding and your
10 evidence that the primary purpose and objective of the
11 holistic proposal was directed at code, contractual and
12 statutory compliance, as opposed to safety?

13 A. Safety is important, and my understanding is if
14 a project was designed and constructed to the code and
15 statutory requirement, then it should be safe.

16 Q. But, as I understand it -- is this right -- obviously
17 safety is important, of course, and fundamental, but the
18 primary objective from MTR's objective of the holistic
19 report, let's focus on the report, was to persuade the
20 government of code, contractual and statutory
21 compliance?

22 A. That is one of the purposes of the report.

23 Q. What's the other purpose, if it's got more than one
24 purpose?

25 A. The safety aspect.

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1 Q. So you say it's both, it's safety and compliance?

2 A. Correct.

3 Q. Okay.

4 Could I then just mention a few topics, hopefully
5 most of which are uncontroversial, but, Mr Ng, you will
6 appreciate that whilst I've read your statement and the
7 report and the Commission has and no doubt the lawyers
8 in the room have as well, there are perhaps people
9 outside who haven't, and so I just want to ask you just
10 to confirm a few points, which I know you have mentioned
11 in your statement or in the report.

12 First of all, as we know, MTR did not engage
13 a specialist expert statistician; that's correct, isn't
14 it?

15 A. It's confirmed to be correct.

16 Q. Was that a conscious decision taken by MTR, that they
17 wouldn't do that and they would simply rely upon the
18 government?

19 A. That is a conscious decision, yes.

20 Q. As a generality -- forget about specifics for
21 a moment -- in the holistic report, reliance was placed
22 by MTR on various government advisers, the expert
23 advisory team, and Prof Yin and his colleagues at the
24 Hong Kong University; is that correct?

25 A. I think that is correct. However, I think it's not just
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1 reliance on the experts. I think it's a consultation
2 with the experts. So it's not just relying on experts
3 provided by the government.

4 Q. Right. So you are consulting with them, there is
5 a process of interaction with them?

6 A. If I can be a bit more precise.

7 Q. Please do.

8 A. For civil and structural issues, we would consult with
9 them. For statistical issues, we would rely on the
10 expert from government.

11 Q. Right.

12 Now another point. The binomial approach -- and I'm
13 not getting into statistics with you, Mr Ng -- as
14 I understand it that was originally proposed by Arup to
15 MTR. Is that correct?

16 A. That is correct, yes.

17 Q. And that then was proposed to government and to
18 Prof Yin, and was agreed to by him?

19 A. That is also correct.

20 Q. There are two appendices to the report that you edited
21 and prepared for the Commission. Perhaps we could just
22 look at those very briefly. I'm not looking at the
23 detail; I just want to know where they came from.

24 If we could go, please, to the same bundle reference
25 that we were at just a moment ago. Go to page 20. Then

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1 if we could go to the next page, please, which I don't
2 think is numbered, unfortunately -- that's why I said
3 it's the next page -- it says "Appendix I". Then over
4 the page, please. Mr Ng, we see there a heading,
5 "Binomial analysis methodology and results". We don't
6 need to look at the calculation, thankfully; not yet.

7 This is, as I understand it, what's known as the
8 Clopper-Pearson method?

9 A. That's correct. That is the Clopper-Pearson method as
10 I understood as well.

11 Q. Is that a method that was known to you or was it
12 something that was given to you by others?

13 A. It's not a method that's known to me. It was a method
14 that's been suggested, I believe from Arup, back in the
15 early -- from the beginning.

16 Q. Right. So that method came from Arup?

17 A. I believe that's correct, but I cannot be sure, but
18 I know that the name has appeared in the report.

19 Q. Yes, that's right.

20 However, the next -- if we could go to the next
21 page, please, appendix II. This is "The formula,
22 methodology and result". If we could go over the page,
23 please. Again, Mr Ng, I'm not going through the detail
24 of this with you, but as I understand it this is the
25 calculation that was done in relation to -- or rather

26

1 the formula that was used in the calculation in relation
2 to the capping beams; is that right?

3 A. That is correct.

4 Q. And, as I understand it, this was a formula that was
5 produced by Prof Yin; is that correct?

6 A. That is also my understanding.

7 Q. Okay. It runs over two pages, as we can see.

8 As I've understood it, Mr Ng, with the formula,
9 Clopper-Pearson, provided by Arup, the formula in
10 relation to the capping beam provided by Prof Yin, MTR
11 personnel itself did the arithmetic on the basis of the
12 formula that had been provided; is that correct?

13 A. I cannot be sure what calculation MTR have done, but
14 I understand the project team have done some
15 calculations themselves, to see what result they would
16 get. But I cannot be sure the exact formula they used.

17 Q. It was my understanding, from what I've read, that
18 having been provided with the various formulae, it was
19 MTR itself that did the calculation, no doubt checked by
20 Prof Yin and his colleagues and perhaps others, but it
21 was you who crunched the numbers.

22 A. We had done some number analysis, correct.

23 COMMISSIONER HANSFORD: Sorry, and when you say you had, is
24 this your team that had done them?

25 A. The MTR project team, correct.

26

1 COMMISSIONER HANSFORD: The MTR project team under your
2 direction?

3 A. Under my -- working together -- direction, you would
4 call it, yes.

5 COMMISSIONER HANSFORD: Okay. Thank you.

6 MR PENNICOTT: All right. Could I then ask you some
7 questions about random sampling.

8 A. Please.

9 Q. Have you read Prof Yin's report -- reports?

10 A. Not entirely. I have not read entirely Prof Yin's
11 report.

12 Q. It is repeatedly said, both in the holistic report and
13 in the report that you have provided to the Commission,
14 that the samples were randomly -- samples of the coupler
15 connections that were tested were randomly sampled, and
16 that's your understanding, is it?

17 A. That's my understanding as well.

18 Q. Could we please look at Prof Yin's report for COI 1,
19 which is in ER1 at tab 12, please.

20 If we could go, please, to page 7. Sorry, let's
21 look at the front sheet so we know what we are looking
22 at. Page 1. We see Prof Yin's name at the top, his
23 position, his specialist field and his instructions. So
24 we know what we are looking at.

25 A. Yes.

26

1 Q. If we could then please go to page 7. He has a heading
2 there, "Rationale and considerations in relation to the
3 random sampling of coupler connections". Do you see
4 that?

5 A. I see that.

6 COMMISSIONER HANSFORD: Sorry, that's not on my page 7.

7 That's page 8, is it not? Or maybe we've got different
8 pagination.

9 MR PENNICOTT: I'm looking at, I hope, COI 1.

10 COMMISSIONER HANSFORD: Okay. I think I know what's

11 happened. The report for COI 1 and COI 2 are the same
12 report, there are just different sections.

13 MR PENNICOTT: Definitely similar, yes.

14 COMMISSIONER HANSFORD: No, no, but this is page 8.

15 I understand.

16 CHAIRMAN: Sorry, are we looking to adequacy of sample size?

17 MR PENNICOTT: We are looking at a heading that should say,

18 "Rationale and considerations in relation to" --

19 CHAIRMAN: Okay. So it's page 8, in fact.

20 COMMISSIONER HANSFORD: Let's not worry about the page

21 numbers. It's the paragraph numbers that matter.

22 MR PENNICOTT: Hopefully it's 2.1.

23 CHAIRMAN: Thank you.

24 MR PENNICOTT: All right.

25 Mr Ng, let me start by asking you this, before I ask
26

1 a couple more detailed questions: were you involved at
2 all in this random sampling/selection process?

3 A. Unfortunately, I was not involved in the selection or
4 the methodology.

5 Q. Let me ask you a rather more direct question then,
6 because I -- I think you will be able to help us, but
7 let me ask you this. In paragraph 2.4.2 in his report,
8 Prof Yin refers to what he describes as "the first
9 meeting", the first sample selection meeting, "held on
10 5 December 2018"; do you see that?

11 A. I do see that.

12 Q. Then at paragraph 2.4.5 he refers to the second sample
13 selection meeting five days later, on 10 December 2018;
14 do you see that?

15 A. I do see that.

16 Q. Did you attend either of those meetings?

17 A. I was not at the meetings.

18 Q. Okay. I don't suppose you know whether Mr Yeung was at
19 either of those meetings?

20 A. He might be at one or both. I think it's better that
21 you ask Mr Yeung.

22 Q. I will ask him. That's fine. I've not been able to
23 find any documents that actually minute or refer to
24 those meetings, but there it is.

25 Could we go back, please, to paragraph 2.2.1.

26

1 COMMISSIONER HANSFORD: Sorry, are we saying those meetings
2 are not minuted?

3 MR PENNICOTT: I can't say they were or they weren't, I have
4 no idea.

5 COMMISSIONER HANSFORD: Okay.

6 MR PENNICOTT: I have certainly not seen any minutes and
7 there are no minutes of those meetings referred to in
8 the chronology that has been prepared week to week by
9 the government, and certainly no documents that evidence
10 those meetings that I'm aware of.

11 COMMISSIONER HANSFORD: Okay. Thanks.

12 MR PENNICOTT: There's a heading, Mr Ng, just above 2.2.1
13 which is headed, "D-wall panels available for selecting
14 sampling units at EWL and NSL slabs". Then Prof Yin
15 deals with the EWL slab. He says:

16 "The EWL slab is connected to East D-wall and West
17 D-wall of approximately 400 metres run from gridlines 0
18 to 50, comprising a total of 234 D-wall panels."

19 Do you see that?

20 A. I do see that.

21 Q. Perhaps without looking at it but for those of us who
22 perhaps can remember, gridlines 0 to 50 cover areas A,
23 HKC, areas B and C; do you agree?

24 A. Yes, I do agree.

25 Q. Am I right in thinking, however, that all the samples --

26

1 leaving aside the 11 samples that were subsequently
2 taken in the HKC area, all the locations were in areas B
3 and C, where samples were taken?

4 A. My recollection is, yes, all the other samples were in
5 areas B and C.

6 Q. Right. So that would not be between gridlines 0 and 50?
7 That would be wherever the gridline starts at B?

8 A. Yes, that would be correct.

9 Q. So at around about gridline 15?

10 A. By area B and C, my recollection, starts around
11 gridline 15.

12 Q. Yes, between 15 and 16?

13 A. Yes.

14 Q. Okay. So, if one is talking about random sampling, the
15 first constraint that appears to have been placed on
16 random sampling was it was only areas B and C that were
17 sampled, apart from the HKC 11 that were done
18 subsequently?

19 A. Because I wasn't part of the sampling process, I do
20 believe the sampling had encompassed all the diaphragm
21 wall panels from gridline 0 to 50. That's as far as my
22 understanding is concerned.

23 Q. All right. But we know that no sampling was done in
24 area A?

25 A. I'm not sure whether -- it might not be the right way to
26

1 say whether the sampling was done at area A, but I think
2 the selection had encompassed the diaphragm walls in
3 area A.

4 Q. But there was no opening-up in area A, was there?

5 A. That is factually correct. There was no opening-up in
6 area A.

7 Q. Therefore, there was no coupler sampling from area A?

8 A. If you talk about opening-up and coupler sampling,
9 that's correct, there's no opening-up and coupler
10 sampling in area A.

11 Q. Okay.

12 COMMISSIONER HANSFORD: Do we know why?

13 A. My understanding is probably, during the random sampling
14 selection, it was simply not selected, by chance or by
15 probability. However, because I wasn't at the two
16 meetings -- we might be able to shed more information in
17 the subsequent witness, Mr Yeung.

18 COMMISSIONER HANSFORD: Okay.

19 MR PENNICOTT: Sir, Prof Yin explains to us, in the
20 succeeding paragraphs of his reports, the detail of this
21 process, how -- this is not a question for you, Mr Ng;
22 I'm just explaining this, Mr Ng, if I may -- in
23 paragraph 2.2.2, for example, he starts off by
24 explaining how the panels were put into four different
25 groups, and then the numbers ascribed to each of the

26

1 four different groups, and explains how those groups
2 were derived.

3 He then has a discussion about the NSL slab, and one
4 can see from that discussion that there were constraints
5 again in the NSL slab about where places could be opened
6 up because, in the NSL slab, as you know, there were
7 inaccessible areas that simply couldn't be opened up, so
8 there was a constraint there.

9 Then what he does, over at paragraph 2.3.4, having
10 said that what they are looking for is 84 samples in
11 both the EWL and the NSL, they are hoping to do
12 28 openings in both the EWL and the NSL, to give them
13 three samples from each -- or three coupler samples from
14 each connection, giving them 84 samples in all. And
15 again, he tells us how they allocated those 28 locations
16 amongst the four different areas, and that's the way it
17 breaks down.

18 Then ultimately you get the description of how they
19 then, having opened up, if you look at
20 paragraph 2.3.15 -- you see all the rebar there and how
21 it was selected and which samples they selected.

22 COMMISSIONER HANSFORD: Thank you.

23 MR PENNICOTT: But the only point I just wanted to clarify
24 with Mr Ng was this whole question of whether in fact
25 the whole of area A, HKC, B and C were taken into
26

1 account. On the face of it, it appears that they were,
2 but it will need, it seems to me, a better understanding
3 of why it was that in fact, as it turned out, it seems
4 originally only B and C -- the locations in B and C,
5 were taken, and there subsequently were 11 done in HKC
6 and none done in area A. I'm afraid I just don't know
7 why that was the case, but perhaps we can explore that
8 with others.

9 All right, Mr Ng. There was a stage -- we know that
10 the holistic report was prepared, essentially, by
11 reference to three stages: stage 1, stage 2, stage 3.
12 But in stage 2 there was a stage 2A and a stage 2B. 2B
13 was the coupler connection sampling exercise that we've
14 just been discussing.

15 A. Yes.

16 Q. And stage 2A were other coupler connections investigated
17 by way of opening-up in specific areas where there were
18 documentary problems about whether -- what was there.
19 Do you recall that?

20 A. I do recall that.

21 Q. So, in the stage 2A investigations and results from the
22 coupler connections testing, somebody decided to exclude
23 those from the analysis that we have. Do you understand
24 that?

25 A. I understand what you are saying.

26

1 Q. Do you know who made that decision not to include the
2 stage 2A results in the overall analysis?

3 A. I do not know precisely who made that decision. This
4 type of discussion was probably part of the task force
5 group meeting.

6 Q. Okay. All right.

7 Can I ask you, please, to be shown the holistic
8 report, which is OU5/3229. Let's just show you the
9 front sheet, so we know where we are, Mr Ng.

10 If you could be then shown 3309. This is a table
11 from which a lot of the calculations have been derived.

12 A. Yes.

13 Q. Because this records all the results --

14 A. Yes.

15 Q. -- as you can see.

16 What you can see in the first, I think, 11 or 12
17 items, if we scroll down -- keep going; stop there,
18 thanks -- that the first 12 items have been discarded;
19 do you see that?

20 A. Yes, I do see that.

21 Q. Again, do you know whose decision it was to discard
22 those items from the calculation?

23 A. Again, I do not know precisely, but I believe this was
24 also discussed in the task force group meetings.

25 Q. All right. We can put that one away.

26

1 Could I ask you, please, to be shown OU6/8579. You
2 may not have all the hard copy pages in that file,
3 depending on whether it has been updated.

4 CHAIRMAN: Do we have it?

5 MR PENNICOTT: It will be on the screen, sir.

6 CHAIRMAN: Thank you.

7 MR PENNICOTT: That should be a letter from Arups to MTR,
8 23 August 2019. Do you see that, Mr Ng?

9 A. I do see that.

10 Q. So this report, just to note the chronology, 23 August
11 2019, postdates, comes after, the holistic report which
12 was submitted on 18 July 2019. All right? Just to make
13 sure --

14 A. Understood.

15 Q. -- we don't get tripped up.

16 Mr Suen, who's sending this to Mr Wong, Ken Wong,
17 general manager-projects, says, "Here's the stage 3
18 assessment report, comprising eight volumes" --
19 thankfully, not all eight volumes are here.

20 Is this a report you would have considered at the
21 time, Mr Ng?

22 A. This report, first of all it's the first time I've seen
23 this cover page, to be honest.

24 Q. Right.

25 A. Regarding would this report be considered, it definitely

26

1 would be a report that MTR would be reading, to
2 understand the contents.

3 Q. All right. Let's just proceed a little bit further.

4 If we go to page 8580, so over the page -- so that's
5 the front sheet to the stage 3 assessment report, Mr Ng;
6 do you see that?

7 A. Yes.

8 Q. If you look carefully, it says "Rev F"; do you see that?

9 A. Yes, I do.

10 Q. Which suggests to me that there were probably six
11 previous versions of this report, starting at the
12 original, followed by A to E. Is that correct?

13 A. I do not know because I'm not the author of the report.

14 Q. Did you see any of the earlier versions of the stage 3
15 assessment report? Do you remember seeing it?

16 A. I do not, unfortunately, no.

17 Q. When you were preparing the holistic report in, I don't
18 know, May/June/July of this year, did you not have
19 an earlier version of the Arup stage 3 assessment
20 report?

21 A. I might have been copied in the report which has been
22 sent to me, in my mailbox, but I have not seen the
23 report myself.

24 Q. Right. So you don't remember reading a version of the
25 Arup stage 3 assessment report for the purposes of

26

1 preparing the holistic report?

2 A. Not myself personally. I have not read the Arup stage 3
3 earlier version of the report.

4 Q. All right. That makes it slightly more difficult for me
5 to ask you some questions about it. Right.

6 Could I ask you, please, to be shown -- sorry, let's
7 just look at the contents so that we can see where we
8 are going. If we look at page 8581, please, so the next
9 page. That's the contents page, Mr Ng. Then 8582,
10 please. You will see, at 8.2, towards the top of the
11 page, "Coupler testing programme and acceptance
12 criteria"; do you see that?

13 A. I see that.

14 Q. Then appendix C is "Coupler testing programme"; do you
15 see that?

16 A. I see that, yes.

17 Q. If we could then, please, go to page 8620, you will see,
18 at the top of the page is a heading, "Stage 2 opening-up
19 works and coupler testing", and then at 8.2, heading
20 "Coupler testing programme and acceptance criteria".

21 Then:

22 "Load test programmes have been carried out by MTR
23 on coupler connections for various levels of engagement,
24 specifically 6, 7 and 8 threads engagement. It appears
25 that all the tension tests have demonstrated that the

26

1 minimum load capacity of the rebar can be achieved for
2 these levels of engagement, and for the onerous cyclic
3 tests it can be reasonably argued that the 7 and 8
4 thread engagement tests also passed."

5 Then, importantly, he says this:

6 "On this basis the fitness for purpose acceptance
7 criteria has been taken as 7 threads, or 32 millimetres
8 of engagement.

9 By comparison, compliance acceptance criteria has
10 been set at 37 millimetres."

11 Mr Ng, was there any time at which you were aware of
12 Arup's conclusions in those last two sentences that
13 I have read out, that the fitness for purpose acceptance
14 criteria had been taken at 32 millimetres' engagement?
15 Were you aware that was Arup's position?

16 A. I was not aware of the position taken in this report.

17 I was aware of the position that Arup has been talking
18 about 32 millimetres from earlier conversations.

19 Q. Right. The question I was going to ask was: there's no
20 reference to fitness for purpose acceptance criteria,
21 32 millimetres of engagement, mentioned in the holistic
22 report, and I just wondered why that is. Do you know
23 why there's no reference to that in the holistic report?

24 A. I suppose -- my answer to that question is because
25 32 millimetres is not 37 millimetres, which has been
26

1 defined as the criteria for the PAUT and 40 millimetres
2 for direct measurement, and that's probably the reason
3 why 32 millimetres has not been mentioned in the
4 holistic report.

5 Q. But if you are looking at safety on the one hand and
6 compliance on the other -- okay, I can see why the
7 37 millimetres is mentioned in the context of
8 compliance, but why isn't 32 millimetres of engagement
9 mentioned in the context of safety?

10 A. I suppose when I talked about the report itself, the
11 safety and also statutory requirement and code
12 compliance have to go -- have to be both achieved, not
13 one or the other. That is the spirit of the report.

14 MR PENNICOTT: All right. Thank you very much, Mr Ng.

15 I have no further questions, sir. Thank you.

16 Sir, I don't know whether that would be
17 an appropriate time to have the morning break?

18 CHAIRMAN: Yes, that's a good idea. 20 minutes?

19 MR PENNICOTT: Thank you.

20 CHAIRMAN: Thank you.

21 (11.18 am)

22 (A short adjournment)

23 (11.41 am)

24 CHAIRMAN: Sorry, can I just ask a couple of questions,
25 Mr Ng.

26

1 MR PENNICOTT: Yes, of course.

2 Questioning by THE COMMISSIONERS

3 CHAIRMAN: I'm trying to work myself back into some of the
4 measurement questions and that sort of thing. Please
5 forgive me if I come at you at a sort of primary school
6 level; okay?

7 But I think what's been the result of the report is
8 37 millimetres is the safety length; is that right?

9 A. In terms of the PAUT results, 37mm has been defined
10 as --

11 CHAIRMAN: And assuming the threaded bar on the rebar is the
12 normal -- the proper length, hasn't been cut at all,
13 that's going to mean that you've normally got two
14 threads showing?

15 A. I think that means maximum two threads showing, maximum.

16 CHAIRMAN: Okay. Come across here. Stand just here,
17 a little bit closer.

18 A. Me?

19 CHAIRMAN: Yes. Thanks very much. Just over here. That
20 will help a lot. This test will be useless on me
21 because I'm an aging gentleman but you are young and
22 vigorous and no doubt have good eyesight. How many
23 threads are showing?

24 A. Looks to me one to two.

25 CHAIRMAN: And if I turn it just this little bit, how many
26

1 threads are showing?

2 A. Looks to be two.

3 CHAIRMAN: Looks to be two? Okay. And if I say to you that
4 could be three?

5 The point I'm making is it's really difficult, is it
6 not, to actually assess how many threads, whether it's
7 two or three or three or four; would you agree?

8 A. It's not easy.

9 CHAIRMAN: It's not easy. And how many of these things in
10 a line have you got to be tested, to be checked by your
11 people?

12 A. We have thousands.

13 CHAIRMAN: Thousands. And is this above ground? Because my
14 understanding is it's not. It's below ground; right?
15 It's in a big tunnel.

16 A. These ones in Hung Hom Station are below ground, yes.

17 CHAIRMAN: Yes, below ground. So you haven't got the
18 sunshine putting its lovely rays onto the metal. You've
19 got artificial lighting. And these people cannot get
20 that close; is that right? They can't come right up and
21 do this, as I'm doing now (demonstrating), inches away?

22 A. They can.

23 CHAIRMAN: They can?

24 A. They can go close up.

25 CHAIRMAN: Okay.

26

1 A. Because the construction, we need proper access for them
2 to do whatever is necessary for inspection.

3 CHAIRMAN: At the final test. Okay. So you would expect
4 them to go that close to check each one?

5 A. I would, because it's part of the quality supervision
6 plan.

7 CHAIRMAN: But on your basis, there's a 68 per cent failure
8 to do that, by your people?

9 A. We expect our people to do that as well because --

10 CHAIRMAN: On your basis, your people have failed in
11 68 per cent of occasions?

12 A. Our people are not required to check the couplers
13 100 per cent according to the quality supervision plan.

14 CHAIRMAN: Okay.

15 A. I believe -- my recollection is that 20 per cent check.

16 CHAIRMAN: Just, you see -- as a layperson, you will have to
17 help me here -- I appreciate the statistics, but I'm
18 looking at a rebar, and I'm now taking it out, which has
19 an awful lot of threads on it and is as solid as
20 anything, and you are suggesting that we can discount
21 all of this as being worth nothing, that's the rest of
22 these threads, if in fact you've got it wrong in your
23 eyesight down in a tunnel in the middle of the day by
24 having three threads showing as opposed to two; right?

25 A. If I may, not precisely just counting it. We do
26

1 understand there are engineering strength, but in terms
2 of compliance we cannot account for that.

3 CHAIRMAN: On one basis, you are discounting it entirely.

4 A. On one basis, yes.

5 CHAIRMAN: It just strikes me as very hazardous way of going
6 about it, incredibly hazardous, and you are talking
7 about thousands of these things, and we are now sitting
8 in this place, after all of these months, working out
9 statistics that go on whether -- and I'm not even sure
10 if that's two threads showing or one thread showing and
11 I'm 6 inches from it. You would agree then it's
12 a difficult task to be dealt with wholesale?

13 A. It's a difficult task but it's a task that must be done.

14 CHAIRMAN: All right. Thank you.

15 You would then say that if somebody didn't see the
16 extra one thread, then you can discount it under one
17 basis? All the rest of the strength in it evaporates?

18 A. I think, for this process, during construction, I think
19 there would be discussions on site, but for the report
20 writing which had been done and the testing which had
21 been done in 2019, we would also be looking at the
22 threads together with the government and the rest of the
23 team, including the police.

24 CHAIRMAN: One other thing. We'll come to it later but it
25 just puzzles me slightly. We have code compliance, and

26

1 you mention it in the report and your statement as
2 well -- thank you -- and we also have safety. Now, do
3 the two -- are the two always synonymous? In other
4 words, if it's not code compliance, it ipso facto, to
5 use something I learned 300 years ago at school, a Latin
6 term, by that fact alone, it's unsafe?

7 A. Engineering-wise, I believe if it's not code-compliant,
8 you can still achieve safety, but if we have to achieve
9 code compliance by product, it would be safe.

10 CHAIRMAN: All right. Let me put it this way: can something
11 be fit for purpose even though it's not code-compliant?

12 A. I believe it can.

13 CHAIRMAN: It can? Okay. Thank you.

14 Yes?

15 MR SHIEH: Mr Chairman just took the wind out of my sails by
16 your last question.

17 CHAIRMAN: I'm so sorry.

18 MR SHIEH: But I do have some left.

19 CHAIRMAN: Sorry.

20 Cross-examination by MR SHIEH

21 MR SHIEH: Mr Ng, good morning.

22 A. Good morning.

23 Q. I represent Leighton. I have some questions for you.

24 Can I ask you to look at the report that you
25 prepared for the purpose of this Commission. I think we
26

1 can just look at the report for the purpose of COI 1.
2 It would be in the expert reports bundle.

3 Can I invite you to go straight to paragraph 5.
4 This follows on from the question just put to you by
5 Mr Chairman. Can you look at paragraph 5.

6 A. Yes, I will.

7 Q. "It is important to note at the outset that both the
8 holistic proposal and the holistic report were not
9 intended to address issues from only a public safety
10 perspective."

11 Do you see that?

12 A. I do.

13 Q. You go on to say:

14 "... they were prepared to address the issues and
15 non-conformances identified in the construction of the
16 Hung Hom Station Extension from a code, contractual and
17 statutory compliance perspective ..."

18 Do you see that?

19 A. I do.

20 Q. You have answered Mr Chairman's question already so I'm
21 not going to revisit that, but one question I am
22 interested in is this. If you look at the second line
23 from the bottom:

24 "... requisite approval from the relevant
25 authorities ..."

26

1 Do you see that?

2 A. I do.

3 Q. In fact, "with a view to obtaining the requisite
4 approval from the relevant authorities"; do you see
5 that?

6 A. Yes.

7 Q. Can I ask you this: who are the "relevant authorities"
8 in this case?

9 A. If you allow me to explain a little bit. For Hung Hom
10 contract, part of the contract is under the instrument
11 of exemption, which is approved or accepted by the
12 Buildings Department. Part of the structure is under
13 the instrument of compliance which will be accepted by
14 the Highways Department. So one approving authority
15 would be Buildings Department, for instrument of
16 exemption; the other approving authority, for instrument
17 of compliance, would be Highways Department.

18 Q. Okay.

19 A. If I may also add, part of the Hung Hom structure is
20 also under full BD Ordinance, and the approving
21 authority for those parts of the structure is Buildings
22 Department.

23 Q. Okay, Buildings Department.

24 Moving on to paragraph 6:

25 "Since the commencement of the preparation ... MTRC
26

1 worked intimately with and engaged in extensive
2 discussions and consultation with the government and its
3 advisers."

4 Would it be right to say that when you referred to
5 "the government", it would include the relevant
6 authorities or departments that you have just mentioned?

7 A. Yes, they would.

8 Q. "MTRCL considered and took into account both comments
9 and views received from the government and its expert
10 advisers in the preparation of the holistic proposal."

11 Can I ask you this: does it mean that the MTRC is
12 inclined to accept rather than reject suggestions or
13 views, however you call them, put forward by the
14 government, because your objective is to get approval by
15 the government? Do you understand?

16 A. I do understand your question.

17 Q. Can you answer it?

18 A. There are consultation process. Some issues could be
19 consulted -- in fact most of the issues are consulted,
20 rather than just accepted outright.

21 COMMISSIONER HANSFORD: Sorry, when you say "are consulted",
22 what do you mean, "are consulted"? Do you mean "are
23 debated"?

24 A. That is -- I might not want to use the word "debate",
25 but "discussed". For example, method of investigation,
26

1 the process that are being carried out on site, yes. So
2 those would be discussed with government and also in the
3 task force group.

4 COMMISSIONER HANSFORD: Right.

5 MR SHIEH: This may be what lawyers call a matter of
6 euphemism: you used the word "consulted", but let's be
7 absolutely realistic about it. You are trying to get
8 approval from various government departments. They
9 decide whether to approve. If they give you comment,
10 it's rather difficult for you to argue the toss with
11 them; right? It's easier for the MTR just to say, "If
12 you want this, fine; I'm going to do it your way"? Is
13 that a fair way of describing it -- human nature, common
14 sense?

15 A. Yes, that can be one way of describing it.

16 Q. Hong Kong government is a shareholder of MTRC?

17 A. That's correct.

18 Q. 75 per cent?

19 A. Thereabouts, yes.

20 Q. Thereabouts.

21 Can I ask you to look at paragraph 21 of the MTRC
22 report. This refers to a letter from RDO, that's
23 Railway Development Office; yes? It's under the
24 Highways Department; correct?

25 A. That's correct.

26

1 Q. "... the following comments on the Arup holistic study
2 report".

3 Look at subparagraph (3):

4 "The argument that there was little technical
5 justification to open up the bottom steel because it was
6 not subject to heavy stress was not acceptable. This
7 was because any improper connection of the bottom steel
8 by reason of the fact that it did not accord with the
9 detailing requirement as stipulated in the Code of
10 Practice for Structural Use of Concrete was regarded as
11 a non-compliance issue ..."

12 Do you see that?

13 A. Yes, I do.

14 Q. First of all, are you aware of the argument concerning
15 little justification to open up the bottom steel, as
16 described in the Arup proposal?

17 A. To a certain extent I am aware of it.

18 Q. You are aware of it?

19 A. Yes.

20 Q. So you are aware of the argument, of the view, that
21 because the bottom steel was not subject to stress --

22 A. It's subject to compression.

23 Q. It's subject to compression, yes, subject to
24 compression, and therefore with little justification to
25 open up. So you are aware of that argument?

26

1 A. I am.

2 Q. So the RDO rejects that argument on the basis put
3 forward there, on the basis of a non-compliance issue;
4 you remember that?

5 A. I do vaguely remember that, yes.

6 Q. Okay. To the best of your recollection, the RDO did not
7 put forward any argument disputing the technical aspect
8 of the view put by Arup; correct?

9 Let me put it another way. The objection by the RDO
10 was on the basis that it did not comply with the Code of
11 Practice. The RDO was not disagreeing with the
12 technical argument about being under compression and
13 therefore there's little technical justification to open
14 up; do you remember that?

15 A. I vaguely remember that, as I explained.

16 Q. Thank you.

17 So that would be an example where objections were
18 raised not on safety or technical grounds but on what
19 appears to be compliance ground; do you accept that?

20 A. I think, yes, objection was raised by more than one
21 reason, and for this case it's more about non-compliance
22 and workmanship.

23 Q. Thank you. I'm talking about this example.

24 A. Understood.

25 Q. Thank you.

26

1 COMMISSIONER HANSFORD: Sorry, are you saying this
2 particular objection was raised for more than one
3 reason? You said, "The objection was raised by more
4 than one reason", so are you saying this particular
5 objection was raised for more than one reason -- are
6 you?

7 A. No, I didn't mean that, not for this purpose, not for
8 this particular example.

9 COMMISSIONER HANSFORD: This particular example, the
10 objection was raised for one reason?

11 A. I believe it's only for one reason, yes.

12 MR SHIEH: Non-compliance with Code.

13 COMMISSIONER HANSFORD: Okay.

14 MR SHIEH: That was why I picked this example.

15 COMMISSIONER HANSFORD: Yes. I was just trying to ensure
16 that we had the right transcript.

17 MR SHIEH: Thank you.

18 Who suggested adopting a confidence level of
19 95 per cent?

20 A. I cannot recall this particular parameter, who adopted
21 the 95 per cent.

22 Q. Thank you.

23 Can I ask you to look at paragraph 34 of the MTRC
24 report. This is about the acceptance criteria.

25 A. Understood.

26

1 Q. Let me ask you some question which does not require
2 statistical training. In an examination, if you set the
3 pass mark at 80 out of 100, you are going to get more
4 failures than if you set the pass mark at 50 out of 100;
5 do you accept that as a general proposition?

6 A. That makes sense.

7 Q. Thank you. So, very often, how many people pass or fail
8 a certain test or how many samples pass or fail
9 a certain test depends on where you draw the pass mark?

10 A. Yes, that would be right.

11 Q. Thank you.

12 At paragraph 34, you set out the press release by
13 the government which stated two criteria: maximum of two
14 full threads exposed, and the embedded length inside the
15 coupler at least 40 millimetres in length. Do you see
16 that?

17 A. Yes, I do.

18 Q. Then, at paragraph 35:

19 "The government ... considered that when conducting
20 the structural analysis ... MTR should use the
21 information obtained from stages 1 and 2, such as the
22 as-constructed details ... and should take into account
23 the technical data provided by BOSA ..."

24 Now, pausing here, were you aware -- and I'm talking
25 about when you prepared the holistic report; right?

26

1 A. Yes.

2 Q. Were you aware of the government announcements and the
3 position taken by the government?

4 A. Yes, I was aware of that.

5 Q. Because those were in fact advised by the government in
6 the meetings that you described in paragraph 36 of the
7 report?

8 A. Yes. That was also discussed in meeting, and also
9 a letter from government was received.

10 Q. Now, were you aware, at the time you prepared the
11 holistic report, that during the first stage of the
12 Commission of Inquiry, expert structural engineering
13 evidence was adduced by various parties, who discussed,
14 as a matter of safety, the kind of embedded lengths that
15 would suffice? Were you aware that there had been such
16 expert evidence given at the time?

17 A. I was aware of that.

18 Q. You were aware?

19 A. I was aware.

20 Q. At the time you prepared the holistic proposal?

21 A. At the time -- not the proposal but the report.

22 Q. Report, thank you.

23 I'm not going to test you about the details, because
24 details may not matter that much, but you were aware
25 that embedded lengths lower than 37 millimetres had been
26

1 put forward by experts in this Commission of Inquiry?

2 A. Not put forward but I was aware there were discussions.

3 Q. Were you roughly aware of the order of magnitude of the
4 kind of acceptable embedded lengths?

5 A. Not precisely how many millimetres of threads, but I do
6 remember there was discussion about what other
7 acceptance criteria should be.

8 Q. Because, let's be honest, people talk. You may not be
9 involved in the hearing itself but obviously within the
10 MTR office people would be saying, "Hey, the stance
11 taken by MTR is 20-something would suffice"; you would
12 have heard that, correct?

13 A. No. We did not really talk about whether 20-something
14 would suffice. I think we were talking about
15 engineering-wise what strength we could have achieved
16 for certain engagement length.

17 Q. Which may not be 37 -- which may not be as high as
18 37 millimetres or 40?

19 A. That's correct. It could be lower than 37 or
20 40 millimetres.

21 Q. Thank you. Because you mentioned engineering-wise --

22 A. Correct.

23 Q. -- from a technical angle?

24 A. That's correct.

25 Q. Thank you.

26

1 Were you aware that Dr Glover -- have you heard of
2 Dr Glover?

3 A. Yes, I do know of Dr Glover.

4 Q. Were you aware that Dr Glover has put forward a view
5 that an embedded length of 26.4 millimetres would be
6 enough for safety purpose?

7 A. I am not aware of the 26.4, but I've been in discussion
8 about Dr Glover about engagement length other than 37 or
9 40 millimetres.

10 Q. Thank you. So you were alive to the argument and
11 possibility that engineering-wise an embedded length
12 less than 37 millimetres would suffice for the purpose
13 of safety? You were aware of that argument?

14 A. I am aware of that argument, yes.

15 Q. But we know, as a matter of fact, government advised the
16 two criteria it had put forward in the press release:
17 maximum two threads exposed, 40 millimetres embedded,
18 with the 3 millimetres' tolerance, namely 37 millimetres
19 by PAUT -- that's what you eventually accepted; correct?

20 A. What we eventually accepted is not based on the press
21 release by government. It was also a letter from the
22 Buildings Department, addressed to MTR and myself.

23 Q. Mr Lok?

24 A. That's correct.

25 Q. Lok Pui Fai?

26

1 A. That's correct.

2 Q. And after all, the Buildings Department is "the"
3 department which plays an important part in giving
4 approvals?

5 A. That is correct.

6 Q. Thank you.

7 After seeing the government's position put to the
8 MTR via the Buildings Department letter, I'm asking as
9 a matter of fact, did the MTR, as a matter of fact, do
10 any work, engineering-wise, to see whether or not the
11 embedded length needs to be as high as 40 millimetres to
12 achieve safety, or did the MTR just say, "The government
13 wants it, we just accept the advice"?

14 A. We did do some laboratory testing for various engagement
15 lengths, to determine the characteristic strength of the
16 coupler engagement, after we received the letter.

17 Q. And engineering-wise did those results show that
18 embedded length need not be as high as 40 millimetres to
19 achieve safety?

20 A. From a tensile strength and compression strength point
21 of view, those were achieved. From my recollection,
22 from the results, elongation-wise it did not meet this
23 particular requirement for --

24 Q. Elongation-wise; right?

25 A. Right.

26

1 Q. Whether elongation is a relevant factor is of course
2 a subject of possible debate; correct?

3 A. I would leave that to the structural expert, yes.

4 Q. Thank you.

5 Let's look at the acceptance criteria suggested by
6 the government.

7 CHAIRMAN: Sorry to interrupt.

8 You would agree, obviously, that if the units that
9 you are looking at are in an area of compression, the
10 term you used earlier, the stress to which they were
11 applied was compressive stress, that would tend to
12 indicate to me, as a layperson, that elongation is not
13 really a matter to worry about?

14 A. I believe that is also the case, engineering-wise, yes.

15 CHAIRMAN: Yes.

16 MR SHIEH: We have dealt with it in part 1 and we can dig up
17 the transcript, but correct me if I am wrong, elongation
18 has to do with -- I'll leave that because it's risky to
19 rely on hazy memory.

20 We've discussed the question about cyclic movement
21 and elongation in part 1 and whether these
22 considerations are indeed relevant for the location of
23 the Hung Hom Extension, but I'll leave that.

24 Let's look at the numbers. Every normal rebar is
25 taken to be 44 millimetres in length?

26

- 1 A. I think they were typically 44 millimetres.
- 2 Q. Typically 44?
- 3 A. Typically.
- 4 Q. Each thread typically is taken to be 4 millimetres?
- 5 A. Yes, that's for the BOSA type threaded bar, yes.
- 6 Q. Two exposed threads would be 8 millimetres?
- 7 A. My calculation, that's correct.
- 8 Q. 44 millimetres minus 8 millimetres would be
- 9 36 millimetres?
- 10 A. Correct.
- 11 Q. With 3 millimetres' tolerance, if there is
- 12 a 36 millimetres' embedded thread, if you use PAUT to
- 13 examine it, with 3 millimetres' tolerance, you could
- 14 measure by PAUT 33 millimetres; correct?
- 15 A. That is correct, yes.
- 16 Q. But that would fail, according to the government's
- 17 proposal, because the government says 37 by PAUT.
- 18 A. I think the criteria should not be looking at only
- 19 maximum two threads exposed. It must also look at the
- 20 actual engagement length.
- 21 Q. Exactly. So merely exposing two threads from an uncut
- 22 rebar is not enough; you also need to fulfil the
- 23 embedded length criterion in order to pass, correct,
- 24 under the government proposal?
- 25 A. That's correct, and if I may add, I believe the threads
- 26

1 exposed is the maximum, two threads. Sometimes, the
2 threads might not be exposed. Sometimes, half a thread
3 might be exposed. But up to a maximum of two threads.

4 Q. I know. But if it's allowed, it's allowed. So you can
5 have a rebar which passed the exposed thread criterion
6 but failed because it did not pass the 40 millimetres
7 embedded criterion?

8 A. Yes.

9 Q. That's internally inconsistent; would you accept that?

10 A. I don't really understand the question about
11 "internally". Could you ask again or in another way?

12 Q. If maximum of two exposed threads is permitted, and on
13 the basis of a 44 millimetre thread, the embedded length
14 would be 36 millimetres only; correct?

15 A. Yes.

16 Q. As a matter of arithmetic. 36 is less than 37; correct?

17 A. Correct.

18 Q. It's less than 40?

19 A. Less than 40.

20 Q. So if one insists on 40 millimetres by direct
21 measurement, or 37 by PAUT, a rebar which exposed two
22 threads would fail the embedded length criterion; do you
23 accept that?

24 A. Yes.

25 Q. Do you regard this dual criterion as internally
26

1 inconsistent then?

2 A. I do not, because I think typically, when we use this
3 product or use this type of connection, we would have to
4 ensure the workmanship, and therefore a typical
5 engagement would be about 10 millimetres -- ten threads,
6 I beg your pardon. And this is the requirement set out
7 by the government for us to use this product.

8 Q. Let me try once again. Day in, day out, when people
9 check coupler connections, they use visual checking;
10 correct?

11 A. Since this incident, actually, I should clarify, we not
12 only use visual checking; we actually put a tape measure
13 into the coupler before the secondary bar is inserted or
14 installed.

15 Q. Okay. Let's leave that. Let me ask that again.

16 The government's proposal is, first of all, at most,
17 two threads exposed, at most. So, on the government's
18 suggestion, you could have 44 minus 8 millimetres,
19 because that would be two threads exposed; correct?

20 A. Yes.

21 Q. So that is one of -- well, that is one aspect of the
22 dual criterion. Yet the government goes on to say you
23 need to look at how many millimetres were actually
24 embedded, it needs to be 40, but if it's 40 it could not
25 have been maximum two threads exposed. Do you

26

1 understand the logic?

2 A. Yes, I do understand the logic.

3 Q. That is why I say it's internally inconsistent, because
4 on the one hand it allows, as one passing criterion,
5 exposure of two threads, that is minus 8 millimetres,
6 but on the other hand it says, "Forget about that
7 because I want 40 millimetres in there." Do you
8 understand what I'm saying?

9 A. I do, but I think it's not as simple as that, because
10 typically we are able to insert ten threads into the
11 coupler. There are maybe situations, if there are not
12 enough space inside the coupler, then you would be able
13 to insert -- you won't be able to insert the ten
14 threads, but typically you would be able to insert the
15 ten threads, and I believe hence that is the requirement
16 to test whether there were ten threads engaged into the
17 coupler.

18 Q. But if it's ten threads engaged, that would be
19 40 inside; there would not be two threads outside?

20 A. That is correct. Or it could be, depending on the
21 threaded bar, some threaded bars are 11 threads, some
22 threaded bars we have seen 12 threads. So even if you
23 have a situation where you have 10 threads engaged, you
24 still might be able to see one to two threads exposed,
25 depending on the threading of the bar by the technician.

26

1 Q. But then why would you look at exposed threads at all,
2 in that case?

3 A. I believe the reason for the exposed threads is that
4 make sure we at least have ten threads inserted into the
5 coupler, or thereabouts, nine or ten threads.

6 Q. Thereabouts, nine or ten threads? So, in your mind,
7 nine or ten could both be acceptable?

8 A. In my mind, no. In my mind, it's very clear. I have
9 a letter sent to me, addressed to me, to follow the
10 recommendation requirements from BOSA, and this is what
11 I have to adhere to.

12 Q. In your mind very clear not as a matter of
13 engineering-wise, but as a matter of what the government
14 wanted; correct?

15 A. In my mind, it's about compliance.

16 Q. Compliance. Thank you.

17 CHAIRMAN: Sorry, could I just come back again -- please
18 forgive me -- and I'm only interested in compliance now,
19 not interested in fit for purpose and safety, which
20 I appreciate may well be, and often are, different
21 issues.

22 But one of the things, coming back to it -- and
23 sometimes, when you revisit something after a break, you
24 see it anew -- is, unless I misunderstand this, the
25 threads have to run at a bit of an angle to each other.

26

1 In other words, they are slightly diagonal, because
2 otherwise it's not going to go in, it's just go to go
3 round and round and round. What I've done is I've
4 looked at two threads showing. Then, when I turn the
5 coupler around, it becomes three threads showing.

6 So your poor workmen, your poor inspectors, they are
7 going to be looking at this, and depending on what part
8 they look at, it's going to be three threads showing or
9 two threads showing, with thousands of them; right?

10 Would I be correct to say, and we are looking only
11 at compliance now, that if three threads are showing,
12 it's non-compliant? And on the basis of compliance,
13 nearly three-quarters of the threads on this statistical
14 analysis were not sufficiently embedded -- right? --
15 which means that on three-quarters of the occasions that
16 threads were put in, the rebar fitters got it wrong, the
17 contractors got it wrong, and your own professionally
18 qualified people got it wrong too, on your own
19 statistical figures. Would that be right?

20 A. I don't think that would be entirely 100 per cent
21 correct, because I think, despite there may be more than
22 two threads showing, we also have to look at whether the
23 couplers had been fully engaged, because if they were
24 not fully -- if the inspectors saw more than two threads
25 showing, the logical question would be asked: can the
26

1 rebar be inserted any further?

2 CHAIRMAN: Yes. I appreciate that.

3 A. This is what we would expect the site team to do.

4 CHAIRMAN: All right.

5 A. And if -- sorry, if the rebar cannot be inserted any
6 further, then it would have achieved its installation
7 requirement, even with more than -- if just with two
8 threads showing.

9 CHAIRMAN: All right. But the fact is that the statistical
10 analysis that we are now looking at, for purposes of
11 code compliance, shows a failure rate for code
12 compliance purposes of about 68 per cent -- or have
13 I got that wrong?

14 MR PENNICOTT: For area A, sir.

15 CHAIRMAN: Yes. I'm just talking about one area, yes,
16 area A.

17 A. For area A, this 68 per cent unfortunately -- probably
18 I'm not in the best position to answer the 68 per cent,
19 because there is process they went through from the
20 statistical approach as opposed to the EWL slab and NSL
21 slab in the rest of the areas, areas B and C.

22 CHAIRMAN: All I'm trying to do is to understand, from
23 a reasonably simple approach -- the first problem that
24 I have, and I'm not an engineer, but we are talking
25 about two threads maximum showing, is that depending how

26

1 you look at it, it could be three, because the threads
2 are going in at an angle; right? So if you are looking
3 at it at the wrong angle, you've got it wrong to start
4 with. I find it very difficult to think that any
5 well-established engineering implement such as this,
6 which is used for putting buildings up all around the
7 world, would be so hazardous; right? So that's number
8 one.

9 Number two is that when you look at what does go in,
10 if there's, say, three threads showing, it's still
11 a very large proportion of the rebar fitting into a very
12 solid coupler.

13 Number three is -- it's difficult to think that from
14 a point of view of code compliance, so much would be
15 placed on the shoulders of the rebar fitter, the project
16 management inspection team and then the MTR inspection
17 team, because, in area A at least, and it's just
18 a sample area, those three sets of people, all of whom,
19 one can assume, were doing their best, by and large,
20 have failed in 68 per cent of occasions. That's like
21 saying you've got a job to do and three-quarters of the
22 time you are going to get it wrong. That would be
23 unacceptable in any set of circumstances. It's very
24 difficult to think that all three layers of engineers
25 and/or workmen would have got it wrong on that number of

26

1 occasions. So it tends to raise questions as to the
2 validity of the statistics.

3 Do you see the point I'm making? And I'm probably
4 coming at an entirely wrongly, and I'm sure you can
5 prove my ignorance now.

6 A. Unfortunately, I really cannot prove your ignorance or
7 whether it is an actual ignorance, because the
8 68 per cent, as I tried to explain, has gone through
9 a statistical process.

10 CHAIRMAN: You see, there's a very old saying that was said
11 about in the 17th century or so, "Statistics, statistics
12 and other damned lies", or something like that.

13 MR SHIEH: Lies, damned lies and statistics.

14 CHAIRMAN: I'm not suggesting that for one minute, and
15 that's not meant in any way whatsoever as a condemnation
16 of people who have far greater brain power than me to
17 specialise in statistics, but what I'm saying is, purely
18 and simply, it requires some clear analysis, from
19 a layman's common-sense point of view. You would agree
20 with that?

21 A. Yes, if I understand what your question is.

22 CHAIRMAN: Thank you very much. I won't take it further.

23 MR SHIEH: Mr Ng, can I trouble you to look at paragraph 41
24 of the MTR report.

25 A. Yes.

26

1 Q. No, I think I can skip that. I think I can go straight
2 to the point Mr Chairman was asking about, and that is
3 area A, which is paragraph 44 of the MTR report. As
4 a matter of fact, no opening-up was carried out at
5 area A.

6 I just want to ascertain a question of fact which
7 you may be able to help with. Area A was not
8 deliberately excluded from the sampling process?

9 A. I do not believe that is the case. I think, again,
10 I explained earlier this morning, the sampling process
11 was witnessed by my other colleague, and I think he
12 might be able to reaffirm my understanding.

13 Q. So it was available for being chosen by way of the
14 sampling process? It so happened that none of the
15 samples chosen came from area A; is that what you
16 understand to be the position?

17 A. That's my understanding.

18 Q. Which leads us to this phenomenon that a 68 per cent
19 strength reduction factor, arrived at through some
20 formula, was applied to area A, when, as a matter of
21 fact, no sample had been taken from area A. That would
22 be a fair way of describing what we are now facing;
23 correct?

24 A. That's factually correct.

25 Q. So the 68 per cent was a statistical construct, not
26

1 based on one single observation of what actually is in
2 area A?

3 A. That's correct, factually.

4 Q. But you, not being statistically trained, would have no
5 view on that? You just took the result; you were not in
6 a position to express any view on the commonsensicality
7 or the absurdity of such a result?

8 A. I think I have to respect the statistical approach that
9 has been carried out, with sampling that has been
10 obtained in HKC and other areas, such as areas B and C.

11 Q. Thank you. Let me just check whether I need to ask you
12 one further question.

13 Paragraph 41. This describes what happened after
14 completion of the PAUT test. We know historically what
15 had happened. After doing the PAUT test, it was
16 discovered that there were certain coupler connections
17 in locations which utilise capping beams; correct?

18 A. Yes.

19 Q. This was actually not foreshadowed or factored in at the
20 stage when the sampling model was considered; correct?

21 A. No. I think when we had the sampling methodology we
22 knew there were capping beams in area A and HKC.

23 Q. You knew already, as a matter of fact?

24 A. Yes.

25 Q. But that feature was not factored in to, let's say, the
26

1 sampling process, as to what samples to be picked from
2 what location?

3 A. My understanding is the sampling was looking at the
4 entire length of the station B, whether there were what
5 type of structure and how they were constructed, so
6 again from gridline 0 to gridline 50.

7 Q. You mean, when the sampling methodology was decided, no
8 conscious attempt was made to distinguish between
9 samples to be taken from capping beam locations and
10 samples to be taken from non-capping beam locations?

11 A. I believe that is correct, yes.

12 Q. So, from MTRC's perspective, whether it's capping beam
13 or non-capping beam, it's to be treated as a uniform
14 whole -- not "hole" but "whole", I mean?

15 A. That's correct, for the sampling methodology.

16 Q. Then can you look at paragraph 41:

17 "In early May 2019, after the completion of PAUT ...
18 the task force group requested MTR to take into account
19 11 coupler connections using type B rebars at the
20 capping beam side which were also exposed during the
21 opening-up. As requested, MTRCL visually inspected and
22 counted the number of exposed threads of those 11
23 numbers of the type B rebars to establish the engagement
24 length. The 11 coupler connections were located at
25 D-wall panel ... From the measured length of the exposed

26

Entire Inquiry (Original and Extended)

1 threads, two out of the 11 samples, which were found at
2 panels WH35 and EH32 in area HKC, were not properly
3 connected. The task force group requested MTR to
4 address those two samples in the statistical analysis.
5 Since the holistic proposal focused on the condition of
6 the coupler connections at the slab side only, the
7 binomial analysis was to be applied to assess the
8 defective rate of coupler connections at one side only,
9 ie from the slab. In May and June ... following
10 extensive discussions and consultation within the task
11 force group, it was agreed that the original statistical
12 analysis had to be modified to account for the combined
13 effect of the conditions of the coupler engagement at
14 both the EWL slab and the capping beam sides.

15 In mid-June 2019, MTRCL proposed using binomial
16 analysis to calculate the defective rate for each of the
17 EWL slab side and the capping beam side coupler
18 engagements, followed by a probability analysis to
19 calculate the combined reduction factor. The task force
20 group commented that MTRCL's proposed analysis was not
21 acceptable from a statistical perspective."

22 Reading this, the impression I got was that how to
23 deal with supposed defects found in the capping beam
24 locations was something which was decided ad hoc in May
25 2019, rather than something already factored in or

26

1 planned when the holistic proposal was designed. Do you
2 accept that?

3 A. I do not accept that. I think I have to be more --
4 clarify this a little bit, because the capping beam had
5 been known at an early stage of the sampling. What we
6 were expecting was to expose the coupler on the slab
7 side, whether there were capping beam or no capping
8 beam. I think the situation is we had actually exposed
9 the coupler at the capping beam area but also -- not
10 just from the slab side but also on the capping beam
11 side.

12 Q. But forgive me for asking what may appear to be a rather
13 layman-like or dumb question: the configuration of these
14 couplers in capping beam areas were known right at the
15 outset; correct?

16 A. Correct.

17 Q. There would be two sides. One would be the slab side,
18 facing the slab. The other would be that facing the
19 D-wall; correct?

20 A. Correct.

21 Q. So in terms of planning, what sort of -- which side is
22 to be exposed ought to have been factored in during the
23 planning process?

24 A. In terms of planning, we were looking at the connection
25 on the slab side.

26

1 Q. Only?

2 A. That's correct.

3 Q. It so happened that, not as originally planned, the
4 D-wall side was opened up as well?

5 A. That's correct.

6 Q. But, as initially planned, if no one opened up the
7 D-wall side, one would just have the samples on the slab
8 side; correct?

9 A. That's a possibility.

10 Q. Yes. And what happened was, just because somebody
11 opened up the D-wall side, the task force said, "Hey,
12 new idea, let's do some statistical analysis based on
13 taking into account the D-wall side as well"? Is that
14 a fair way of describing what had happened?

15 A. Probably not entirely fair because I think when we see
16 a defect on site, probably not just one party but
17 I suppose every party involved in the project would have
18 to look at the defect that's been exposed. So it
19 wouldn't be just one party that might be raising this
20 question.

21 Q. What I mean is, as originally planned, it was obviously
22 thought that only opening up the slab side would be
23 enough, because that was what was originally planned;
24 correct?

25 A. Correct.

26

1 Q. No one from the government actually said, "Hey, hang on,
2 as a matter of planning or whatever, opening up one side
3 is not enough; let's open up the other side"? No one
4 from the government suggested that at the planning
5 stage; correct?

6 A. That's correct.

7 Q. Forgive me for using this word: opportunistically, after
8 some opening-up was done, the government said, "Hey,
9 hey, let's open up the other side"; would it be a fair
10 way of describing it?

11 A. No. That's not exactly what happened.

12 If I can explain a little bit, and if I cannot
13 explain clearly, I believe my colleague Mr Yeung would
14 be able to explain even more clearly than I am.

15 My understanding is, in area A, what we have
16 actually done was opened up a typical opening size to
17 expose the coupler.

18 Q. Sorry, area A, did you say?

19 A. I beg your pardon. I have to say HKC. I have to take
20 that back. It's actually HKC. The opening-up location
21 actually first exposed the coupler on the capping beam
22 side rather than the slab side, because we were planning
23 to open up the connection on the slab side, but it just
24 so happened the position of the coupler was not exactly
25 aligned with the planned opening at those particular

26

1 locations.

2 So, in effect, when we exposed the coupler
3 connection on the capping beam side, we still had to go
4 to expose the connection on the slab side, but just by
5 those locations we actually had ended up exposing the
6 couplers on the capping beam side and the slab side.

7 Q. Let me try it one more time. At the original planning
8 stage, it was not regarded by anyone to be a problem
9 that for capping beam location, one only opens up the
10 slab side; correct?

11 A. I don't think anyone would discount any possibility or
12 probability. I think we were looking at the capping
13 beam side. I mean, I beg your pardon, at the slab side.
14 But having said that, I don't think anyone would
15 discount any possibility of finding other things.

16 Q. Of course, in real life, never say never, but at the
17 planning stage, opening up the slab side was regarded as
18 suitable, appropriate?

19 A. That was the plan.

20 Q. And there was no suggestion -- there was no
21 suggestion -- for example, at the planning stage, which
22 says, "Ah, consequential upon opening up the slab side,
23 if defects reach a certain level then further steps are
24 to be taken"? There's no such step in the flow chart?

25 A. There may have been but I cannot recall whether there's
26

1 actually a step to look at this possibility. I don't
2 know if there's a step that looks at this possibility.

3 Q. Finally, the holistic report, it is the work product of
4 MTRC; correct? It's issued in the name of MTRC?

5 A. Correct.

6 Q. Did anyone from MTRC send any draft of the holistic
7 report to the government for its review or comment
8 before MTRC issued the holistic report?

9 A. I believe that was part of the process of drafting the
10 report. We did send draft to government.

11 Q. So the government would be able to comment on or object
12 to or influence any part of the holistic report?

13 A. As far as we are concerned, the government were able to
14 comment on the report.

15 Q. Did the government amend or comment on any drafts of the
16 report?

17 A. My recollection is they did.

18 Q. How about the report produced for the purpose of this
19 Commission of Inquiry? Has the government been given
20 a chance to comment on those reports?

21 A. Do you mean the statistics report?

22 Q. Correct.

23 A. I don't recall there was that opportunity.

24 MR SHIEH: Thank you.

25 I have no further questions.

26

1 CHAIRMAN: Thank you very much.

2 Cross-examination by MR KHAW

3 MR KHAW: Mr Ng, I act for the government and I have a few
4 questions for you.

5 Regarding the questions raised by Mr Shieh just now
6 on behalf of Leighton, you remember what he described as
7 dual standards, when he referred to the 40mm and also
8 two exposed threads -- do you remember that?

9 A. I do remember that.

10 Q. If we can take a look at some of the results. If we can
11 have a look at the Original Inquiry bundle OU5,
12 page 3312.

13 Now, 3312, if we can take a look, for example, at
14 items 63 and 64 first -- do you see that?

15 A. I do.

16 Q. Number 63, we have the information which shows that
17 there are two to three exposed threads; do you see that?

18 A. Yes, I do.

19 Q. Then 63 shows engagement length of 40.6, and 64 shows
20 engagement length of 39.9.

21 In those examples, is it correct to say that even if
22 two to three exposed threads were found, that would
23 still be considered a pass so long as it is longer than
24 37mm? Is that correct?

25 A. That is correct.

26

1 Q. If we take another example, number 81, the same page,
2 the last item. We can see that the number of exposed
3 threads was stated as two to three; correct?

4 A. Correct.

5 Q. But the engagement length is recorded as 36.8, which is
6 below 37; right?

7 A. Correct.

8 Q. And that is considered a fail?

9 A. That's correct.

10 Q. Let's take one more example. The next page, item 89.
11 We can see that the number of exposed threads was
12 recorded as one to two only; do you see that?

13 A. I do see that.

14 Q. But the engagement length was 35.4; do you see that?

15 A. Yes.

16 Q. And that is considered a fail?

17 A. That's correct.

18 Q. So is it fair to say that regardless of the number of
19 exposed threads, whether it's one, two or three, the
20 primary factor in determining whether it is a pass or
21 a fail depends on the engagement length, ie the 37mm
22 which has been agreed?

23 A. I would say that would be the primary requirement,
24 because there are bars, as I explained earlier, that
25 could have more than ten threads for type A bar. In
26

1 particular, if I can recall, for type B bar, you could
2 have ten threads engaged but you could also have ten
3 threads exposed.

4 Q. Thank you.

5 COMMISSIONER HANSFORD: Can I just follow up on that,
6 please. If you take item 75, where we've got three to
7 four exposed threads, and a 40.5 engagement length, that
8 one's defective. Why is that one defective?

9 A. Good question. I cannot answer this one.

10 COMMISSIONER HANSFORD: It's just one that jumped out at me.
11 There may be more. But I thought you were telling us
12 that it had to pass both columns in order to be not
13 defective. Is that what you are telling us?

14 A. No. I think, if there were ten threads engaged, meaning
15 we expected there to be at least ten threads engaged
16 into the coupler, but the steel bar could have more ten
17 threads threaded during the production. So, if there
18 were more threads threaded, such as 12 or more, then you
19 would still see more than two threads exposed, even when
20 we have ten threads engaged. There is that possibility.

21 COMMISSIONER HANSFORD: I've just spotted one anomaly, that
22 item 75. I don't pretend that was selected at random.
23 But there may be others here, which is slightly
24 worrying, I think.

25 A. It's well spotted.

26

1 MR KHAW: So, in terms of the number of exposed threads is
2 concerned, in the light of acceptance or rejection
3 criteria, is it correct to say that the acceptance
4 criteria have been set to be two to three exposed
5 threads, in the sense that when it exceeds two to
6 three, ie three to four, in view of the example just
7 mentioned by Prof Hansford at 75, when it exceeds two to
8 three then it's considered a fail? Is it a fair way to
9 say that?

10 A. According to the conditions -- requirements put to us,
11 to the project team, by the government, if it's exposed
12 more than two threads it's classified as a fail case.

13 Q. If you can then take a look at OU3254.

14 3254, it's part of the holistic proposal report, and
15 3.3.20 says -- the heading is "Rebar/coupler with 2 to 3
16 exposed threads", and then it continues to say:

17 "PAUT technicians estimated the number of exposed
18 threads based on their visual examination. They would
19 report the 2 to 3 exposed threads when they observed
20 a condition which is more or less similar to the maximum
21 tolerance specified by the coupler manufacturer ...
22 Eight random samples at the EWL slab with 2 to 3 exposed
23 threads and engagement length not less than 37mm ... or
24 40mm ... are not considered as defective for the
25 binomial analysis."

26

1 So there are two conditions that were looked at in
2 determining whether it's a pass or a fail. One is
3 whether it exceeds two to three exposed threads, and the
4 other one is the engagement length; is that correct?

5 A. That's correct.

6 Q. Another question that I wish to just very briefly
7 discuss with you relates to the stage 3 assessment
8 report as prepared by Arup. I believe Mr Pennicott,
9 near the end of his examination, referred you to that
10 report which was I think published in August this year.

11 If we can have a look at that report. It's again
12 part 1 Inquiry OU6, page 8580.

13 That's the cover page of that report that we have
14 seen this morning.

15 If I can ask you to take a look at 8620.

16 A. Yes.

17 Q. Paragraph 8.2, that you have seen earlier this morning.
18 8.2, the second paragraph, says:

19 "On this basis the fitness for purpose acceptance
20 criteria has been taken as 7 threads, or 32mm of
21 engagement.

22 By comparison, compliance acceptance criteria has
23 been set at 37mm."

24 Mr Pennicott referred you to the second paragraph,
25 regarding the seven threads and 32mm of engagement.

26

1 Now, we all understand that this stage 3 assessment
2 report was published after the holistic proposal report
3 came out; is that right?

4 A. That's correct.

5 Q. I'm just wondering or can you confirm whether this
6 fitness for purpose acceptance criteria taken as seven
7 threads or 32mm had ever been tabled for consultation or
8 discussion with the government?

9 A. It had been tabled, following the lab testing results,
10 yes.

11 Q. Do you have any recollection as to when it was tabled?

12 A. It would have been -- the first batch of tests was
13 finished in February 2019, and the second batch of
14 testing was finished in April 2019. So I believe any
15 time between February -- after February, we would have
16 tabled these results with government.

17 Q. I see. The results were actually provided to the
18 government, but my earlier question was whether this
19 fitness for purpose acceptance criteria being set at
20 seven threads or 32mm, whether that particular set of
21 criteria had been tabled for the government's acceptance
22 or consideration?

23 A. The criteria had not been tabled. We were merely
24 talking about the characteristic strength of the partial
25 engagement couplers.

26

1 Q. Thank you.

2 Earlier this morning, Mr Pennicott referred you to
3 the binomial analysis, and you agreed with us that the
4 binomial analysis was proposed or initiated by Arup and
5 it was subsequently accepted by the government, after
6 consultation. You remember that?

7 A. I do.

8 Q. Regarding the 95 per cent confidence level, I think
9 Mr Shieh also asked who actually proposed that
10 confidence level, and I think your answer to us was that
11 you are not sure who actually initiated?

12 A. I cannot recall who.

13 Q. You cannot recall.

14 A. Yes.

15 Q. If I can just take you to the MTR report on statistical
16 analysis regarding part 1 of the Inquiry. Page 11 of
17 this report, internal page 11, starting from
18 paragraph 24. Have you found that?

19 A. I have it.

20 Q. Thank you. Paragraph 24 starts with this statement,
21 about Arup's recommended use of the binomial approach,
22 and then that approach "is summarised as follows".

23 Then if we can take a look at subparagraph (5). It
24 says:

25 "Arup gave the following example: If one takes
26

1 a population of 10,000 coupler connectors, and exposes
2 and tests 50 and none fail, there is a possibility that
3 all of the 10,000 couplers pass. There is however also
4 the possibility, albeit remote, that all of the other
5 9,950 couplers are faulty. If all the combinations of
6 passing and failing in between these extreme situations
7 are considered, given the sample and population sizes,
8 a binomial statistical analysis establishes there is
9 a 95 per cent possibility/confidence level that
10 a maximum of 5.67 per cent of the whole population is
11 faulty."

12 So just through reading this paragraph, when the
13 report talks about Arup's recommended use of the
14 binomial approach, and also the example given by Arup
15 which has led to the 95 per cent confidence level,
16 am I correct to say that in fact the 95 per cent
17 confidence level was proposed by Arup during his
18 analysis?

19 A. Not -- I think, reading this report, cannot precisely
20 say whether it was Arup, because it says "there is
21 a 95 per cent confidence level". It doesn't say "adopt
22 a 95 per cent confidence level", subparagraph (5).

23 Q. Perhaps the last question. You remember Mr Pennicott
24 earlier this morning asked you about the composition of
25 the task force; do you remember that?

26

1 A. I do remember.

2 Q. So it consists of representatives from the government,
3 from the MTR and also from the EAT team and also the
4 Hong Kong Police, as you have told us?

5 A. Correct.

6 Q. Perhaps if I can just take you to one small paragraph of
7 the report, of the MTR's report: paragraph 42. It says:

8 "In mid-June 2019, MTRCL proposed using binomial
9 analysis to calculate the defective rate for ... the EWL
10 slab side and the capping beam side coupler engagements,
11 followed by a probability analysis to calculate the
12 combined reduction factor. The task force group
13 commented that MTRCL's proposed analysis was not
14 acceptable from a statistical perspective."

15 Then you referred us to an email -- the report
16 refers us to this email at footnote 42. There's
17 an email from task force to MTRCL dated 21 June.
18 I think that can be found at, again original bundle,
19 B21/26696.

20 It's an email dated 21 June 2019 from Eddy Kam of
21 RDO to Mr Oscar Wong of MTR, and it basically talks
22 about the "binomial analysis on the failure rate of
23 coupler connection at capping beam location." Then it
24 says:

25 "It is noted that the calculation simply multiply
26

1 the upper bound of two independent 95 per cent
2 confidence intervals. The product does not make much
3 statistical sense as the overall level of significance
4 is unknown. It is not a [then there is a calculation].
5 So the estimates are not justified statistically. You
6 are required to recast your analysis with advice from
7 your statistics experts."

8 Pausing here, I understand that you told us that you
9 probably were not privy to most of the task force
10 discussions?

11 A. That's correct.

12 Q. Are you aware that in fact in around June there were
13 actually quite a lot of communications between the
14 government and MTR regarding the statistical analysis?

15 A. I was aware of that.

16 Q. If we just look at the last sentence which says:

17 "You are required to recast your analysis with
18 advice from your statistics experts."

19 Now, we understand that MTR did not engage any
20 outside statistical consultants for this particular
21 purpose, save and except the advice given by Arup in
22 relation to the adoption of the binomial analysis that
23 you have stated in your statement, and also MTR's
24 report.

25 So, at that time, if MTR needed to seek advice on
26

1 statistical matters, apart from the advice or input
2 given by the government for discussion purposes or for
3 your consultation, would it be right to say that it
4 would be Arup that MTR would be looking to for such
5 advice?

6 A. It would not be appropriate because I think Arup were
7 not considered as -- I hope Dr Glover doesn't mind me
8 saying that -- a statistical expert, so we didn't engage
9 Arup on this matter.

10 Q. I see. But apart from Arup and apart from the advice
11 given by the government, would there be any party that
12 MTR could actually look to when it was necessary to
13 consider matters regarding statistical analysis at that
14 time?

15 A. Yes. There would be -- although I wasn't involved in
16 the task force group discussion for this issue, but
17 I think one of the options was to engage, again, the
18 statistical expert provided by the government who was
19 involved in the early stage of the statistic sampling
20 methodology, because they were already involved in the
21 project, already conversant with the situation.

22 Q. Thank you. And apart from that, there would be no other
23 parties that MTR would be looking to in relation to
24 matters arising from statistical analysis?

25 A. That's correct.

26

1 Q. Thank you.

2 COMMISSIONER HANSFORD: If that's correct, who's Eddy Kam
3 referring to in that last sentence? Do we know?

4 A. I think his question was "you are required to seek
5 somebody's assistance that might be appointed by MTR".
6 That person, by the time of the email, did not exist.

7 COMMISSIONER HANSFORD: So is he effectively saying "you are
8 required to get some statistical advice on this matter"?

9 A. That's our understanding.

10 MR KHAW: But, as a matter of fact, as you pointed out,
11 there was no other party that you would actually look
12 to, if it was necessary to consult anyone on matters of
13 statistical analysis?

14 A. I think it's not appropriate to say there was no other
15 party. I think we had considered there is
16 an appropriate party already that existed, such as the
17 government statistical expert.

18 MR KHAW: I have no further questions.

19 CHAIRMAN: Good. Thank you very much.

20 Mr Boulding, should we do this after lunch?

21 MR BOULDING: Yes, I'm quite prepared to do that, sir.

22 Thank you very much.

23 CHAIRMAN: So the normal -- forgive me --

24 MR PENNICOTT: 2.30.

25 CHAIRMAN: 2.30, yes. Good. 2.30. Thank you.

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1 (1.08 pm)

2 (The luncheon adjournment)

3 (2.32 pm)

4 Re-examination by MR BOULDING

5 MR BOULDING: Good afternoon, Chairman. Good afternoon,
6 Commissioner.

7 Good afternoon, Mr Ng. I just have one matter I'd
8 like to ask you about, if I may. Do you remember
9 agreeing with the learned Chairman that the works could
10 be fit for purpose even if they were not code-compliant?

11 A. May I ask who are you referring to again, agreeing with
12 who?

13 Q. The Chairman. Do you remember the Chairman suggesting
14 that?

15 A. I beg your pardon. I just didn't hear that word
16 properly.

17 I do agree that without being code-compliant, it can
18 still be fit for purpose.

19 Q. And tell me this: by "fit for purpose" do I understand
20 you to be referring to the fact that the works are safe?

21 A. Yes, in my opinion, "fit for purpose" also means safe.

22 Q. Now, if the works can be fit for purpose even though the
23 works are not code-compliant, does that mean that code
24 compliance is irrelevant?

25 A. No, that does not mean code compliance -- it's not
26

1 irrelevant. In Hong Kong, we work to the building
2 regulations, and in so many words, that requires to be
3 code-compliant.

4 Q. Can we look at a document together. Could we go to
5 COI 1, stats report, COI 1, and that's at ER1, expert
6 reports 1, and I think tab 11.1. Then if we could go to
7 paragraph 5 which I hope is on page 2 -- splendid -- can
8 you read that paragraph to yourself, please, Mr Ng.

9 A. I've read it.

10 Q. Now tell me this. If the works are not code-compliant,
11 would you be able to get the requisite approval from the
12 relevant authorities for commercial operation of the
13 Hung Hom Station works?

14 A. Yes. If I understand this question correctly, that
15 means if the work was code-compliant, yes, I would be
16 able to get statutory compliance and certification
17 signed off by the approving authority.

18 Q. What about if the works are not code-compliant? Would
19 the authorities be prepared to sign off the works?

20 A. Not in my experience.

21 MR BOULDING: Thank you very much indeed, Mr Ng.

22 Sir, Chairman, I don't know whether you have any
23 questions arising out of that.

24 Questioning by THE COMMISSIONERS

25 CHAIRMAN: For a layperson like myself, I find myself

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1 mentally in a conundrum, in a difficult position,
2 because if you have, as in the present case, and if, for
3 purposes of argument at this stage -- because of course
4 this Commission must hear all evidence before it makes
5 its mind up on any factual matter, and it is to be
6 stressed that the Commission's statement in its interim
7 report that it believed the station to be safe was
8 an interim finding, by its very nature -- but leaving
9 all that aside, if you agree that works can be fit for
10 purpose even though they are not code-compliant, but
11 they must meet the code, that raises two questions, in
12 my mind.

13 The first question is what is the purpose or what is
14 the essential purpose of the code if not to ensure that
15 building works are fit for purpose and meet other
16 requirements such as environmental requirements,
17 spacing, fresh air requirements, urban planning and that
18 sort of thing? But also the question arises: would
19 there not be room for negotiation between a contractor
20 who has completed works which are fit for purpose and
21 which in all other respects meet the necessary
22 requirements such as urban planning and things like
23 that -- would there not be room for that contractor to
24 negotiate with the Buildings Department, to say, "It
25 becomes simply non-feasible financially to make it

26

1 code-compliant? You know, we are having to spend
2 hundreds of millions of dollars to do so, when in this
3 particular case it's not necessary", and then to
4 negotiate with the buildings office; so they can say,
5 "Yes, we would not normally allow something that doesn't
6 meet the code to be given final approval, but in this
7 instance we always have a discretion and we will
8 consider agreeing"?

9 A. This is a question addressed to me, I presume?

10 CHAIRMAN: It's a question addressed to you. It may be that
11 you are not able to answer it, but I suppose if I reduce
12 all that verbiage down to a simple question, it becomes
13 simply this. If everybody's satisfied that it is fit
14 for purpose, is there not room to negotiate with the
15 authorities to have approval granted for occupation,
16 even though it may not meet the code in all respects?

17 A. If I may make a response, sir.

18 CHAIRMAN: Yes.

19 A. First of all, I think the purpose of the regulations in
20 Hong Kong is, in addition to the code, it's also the
21 statutory requirement. For example, the statutory
22 requirement requires the project manager to make
23 submissions of -- both design submissions, as-built
24 records, test records and the like, so that there is
25 a proper paper trail and record to keep a proper project

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1 record, to demonstrate that the works have been
2 constructed accordingly.

3 I'm not personally privileged to make any suggestion
4 whether there can be any negotiation with the authority,
5 even though I'm the competent person on this particular
6 contract and other contracts. In this city, there are
7 other registered practitioners who might have
8 a different view, but in my own personal opinion I take
9 discipline as a very serious issue, as a very serious
10 matter, in that if there are records required, if there
11 were regulations that had to be followed -- I don't
12 really ask for a judge to relieve my penalties for
13 a speeding ticket, for example, unless the judge makes
14 that decision himself. So, therefore, I take
15 record-keeping as a serious matter in my own personal
16 profession, in addition to workmanship and design codes.

17 CHAIRMAN: All right. Good. Thank you. I think you made
18 the point well that, from your perspective, even though
19 something may be fit for purpose as far as you can see,
20 there must be full records of what was done, but you
21 don't know what the future holds as to the stresses on
22 the building and where those records may be necessary,
23 and they are part of an overall regime which ensures the
24 integrity of the whole building.

25 A. Yes, I agree to what you said.

26

1 CHAIRMAN: Okay. Good.

2 COMMISSIONER HANSFORD: But just following up on that,

3 Mr Ng: there's a difference, is there not, between the
4 requirement to complete and submit records and the
5 requirement to comply with the code? They are not the
6 same thing, are they?

7 A. I don't believe they are the same thing, because design
8 code is a very technical nature. Statutory requirement
9 is a process nature.

10 COMMISSIONER HANSFORD: Right.

11 A. Yes.

12 COMMISSIONER HANSFORD: So what you have been referring to,
13 in your response to the Chairman, very helpfully, has
14 been the statutory compliance?

15 A. That is correct. actually, I would also add that the code
16 in Hong Kong also has their own history, although there
17 are other international codes, and when we step outside
18 the Hong Kong Code we must seek also agreement and
19 approval from the authorities to use international
20 codes, which are not first and foremost in Hong Kong, to
21 my understanding.

22 COMMISSIONER HANSFORD: Yes.

23 CHAIRMAN: But there must be, must there not, some level of
24 compromise? Because you may have a building, a very
25 detailed, complex public structure, which everybody
26

1 accepts is fit for purpose, but in a number of respects
2 does not meet the code and it becomes impossible,
3 without knocking the whole thing down and starting
4 again, to meet the code. Then there must be some room
5 for compromise, because otherwise you have two results.
6 (a) you have a very big, beautiful building that nobody
7 can ever use, or (b) you have to knock it all down and
8 start again.

9 A. To a degree, yes. I do believe, as an engineer, you do
10 have to have the freedom to adopt certain practices.
11 But it comes to a point where adopting the certain
12 practice also needs agreement with certain authorities.
13 All I'm saying is I'm not in the privilege to ask for
14 waiver, unless it is something which I strongly believe
15 in, which I propose.

16 CHAIRMAN: No, I'm not suggesting -- sorry, I think you
17 missed my question and it's my fault, obviously -- but
18 what I'm saying is if you end up without necessarily
19 meeting the code in all respects with a building which
20 has been completed, and it is fit for purpose, everybody
21 accepts that, but there has been negligence and there
22 has been a failure to meet the code in certain respects.
23 At that juncture, you've got limited choices, have you
24 not? All I'm asking is: do you believe there's any room
25 for manoeuvre at that stage, with the authority, in

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1 those circumstances?

2 A. With all due respect, I do think this is a question that
3 should be answered by the authority.

4 CHAIRMAN: All right. Good. Thank you very much.

5 MR SHIEH: I hope I won't be regarded as slightly
6 presumptuous to raise and make this point, because
7 I think the questions raised by the Commissioner have
8 hit on a point that could have been by way of
9 submission, but since the Commission has expressed
10 an interest in hearing it, I might as well raise it now
11 and then I can ask the next witness or the Commission
12 may wish to explore it with this witness, and that is
13 this. One has assumed there is this mysterious creature
14 called the code in respect of which you need to comply,
15 by adhering to the bible laid down by Mr Lok, ie
16 40 millimetres embedded and two threads maximum exposed.
17 It's been repeated so many times and one could be
18 forgiven for thinking, yes, there is a code/statute
19 somewhere which stipulates 40 millimetres embedded plus
20 two exposed threads, to the extent that this witness
21 says, "Yes, you can be safe, but you don't need
22 40 millimetres embedded and two threads exposed, then
23 tough luck, you breached the code", but what is the code
24 that stipulates two threads maximum exposed and
25 40 millimetres embedded?

26

1 Mr Lok is not the law. The Building Authority is
2 not the law. They may wish to err on the side of
3 absolute conservatism, to err on the side of
4 disapproval, but what is the code and what is the
5 statute? This witness may or may not know. It may all
6 be a matter of submission at the end of the day. But
7 one mustn't assume that there is a code somewhere for
8 which one breaches if we don't need the bible laid down
9 by the government. The government is not the law. The
10 government always breaks the law -- often breaks the
11 law.

12 CHAIRMAN: Thank you.

13 Sorry, Mr Boulding, I think we've --

14 MR BOULDING: As my learned friend said, that rather sounds
15 like a submission to me, and I don't intend to follow
16 that one up.

17 CHAIRMAN: The question may in fact -- I think this witness
18 has answered it very professionally and very well indeed
19 by saying, "At the end of the day, this is not for me;
20 ask somebody else more appropriate."

21 MR BOULDING: It sounds as though you are free to go, Mr Ng.
22 Thank you very much indeed.

23 Could he be released, sir?

24 CHAIRMAN: Of course. Mr Ng, thank you so much.

25 I think it should also be said, for the sake of
26

1 absolute transparency, is that Mr Ng on two occasions,
2 I think, acted as one of the persons who escorted
3 Prof Hansford and myself around the Hung Hom building
4 site, not on his own but with another group of people.
5 He acted fully professionally and at arm's length in all
6 respects during those visits.

7 MR BOULDING: There you are. Well done.

8 CHAIRMAN: I just wouldn't like anyone to think there had
9 been any form of cosiness between this witness and
10 ourselves.

11 (The witness was released)

12 MR BOULDING: Of course. Thank you very much.

13 I will now call my next witness, Mr Yeung.

14 I understand that Mr Yeung is going to give evidence in
15 Cantonese, so we will need our headsets.

16 MR YEUNG KIN WA (affirmed in Cantonese)

17 Examination-in-chief by MR BOULDING

18 Q. Good afternoon, Mr Yeung. We know you have produced
19 a short witness statement for the assistance of the
20 learned Commissioners. I wonder if we could look at the
21 first page. It's BB10090.

22 Do we there see the first page of your witness
23 statement, Mr Yeung?

24 A. Yes.

25 Q. If we go on to page 10092, do we there see your
26 signature immediately below the date of 23 September

1 2019?

2 A. Yes.

3 Q. Are the contents of that statement true to the best of
4 your knowledge and belief?

5 A. 正確, yes。

6 Q. Now, I'd like to ask just a couple of questions by way
7 of clarification arising out of Mr Ng's questioning.
8 I wonder if we could go to Prof Yin's report, which
9 I understand is ER1, tab 12. Splendid.

10 Then could we go on, please, to paragraph 2.4,
11 which, depending upon the version which is up here --
12 it's page 14 of my version; that will do. Scroll down.
13 Splendid. Go up a bit, please.

14 Do you see the section there headed "2.4 Samples
15 selection meetings"? Then:

16 "Two meetings were held between the government and
17 MTRCL for the random selection of sampling units at EWL
18 slab and NSL slab for purpose (ii) investigation."

19 Do you see that there?

20 A. 睇到, yes。

21 Q. Do I understand, Mr Yeung, that you in fact attended
22 both of those meetings?

23 A. 正確。

24 Q. And obviously, if asked by any of my learned friends or
25 the Commissioners about those meetings, I trust you will
26 be in a position to tell them what occurred; is that

1 correct?

2 A. 係，可以。

3 Q. Thank you very much, Mr Yeung. What's going to happen
4 now is that you'll probably be questioned first by
5 Mr Ian Pennicott QC, counsel for the Commission. Then
6 various other lawyers in the room might ask you
7 questions, and then I'll finish at the end, and
8 of course the learned Chairman and Prof Hansford can ask
9 you questions at any time that takes their fancy.

10 A. 清楚。

11 MR BOULDING: Please stay there.

12 COMMISSIONER HANSFORD: Maybe I can take you up on that
13 straightaway, Mr Boulding, by just asking: Mr Yeung, do
14 you know if those two meetings were minuted?

15 A. 據我記憶，係冇minutes，冇meeting minutes，no，no meeting
16 minutes。

17 COMMISSIONER HANSFORD: No meeting minutes. Thank you.

18 Questioning by MR PENNICOTT

19 MR PENNICOTT: That saved me one question.

20 Mr Yeung, good afternoon, and thank you very much
21 for coming along to give evidence to the Commission. As
22 Mr Boulding said, I'm acting for the Commission and I've
23 got a few questions for you, not a great deal.

24 Mr Yeung, could I return immediately to the question
25 of random sampling. Mr Boulding has helpfully

1 indicated, through you, that you were at the meetings on
2 5 and 10 December 2018, referred to in Prof Yin's
3 report.

4 So would it be right to conclude, Mr Yeung, that you
5 had some fairly detailed involvement in the random
6 sampling process?

7 A. 或者我可以解釋下嗰個過程係點，當其時就係喺我哋交完咗個holistic
8 proposal，10月4號之後，就政府就即刻安排咗一個meeting，就喺香港大學
9 進行嘅，個目的就係由呢個香港大學嘅professor嘅團隊去主持一個sampling
10 selection嘅exercise，佢當時就invite咗MTR係其中一個代表，當其時亦
11 都有BD嘅同事，亦都有police，仲有RDO嘅在場，主要就係witness整個
12 sampling exercise嘅過程。

13 喺開始嘅時候就Hong Kong U嘅professor就會解釋嗰個sampling
14 嘅methodology，同埋佢係會點樣做法，跟住亦都講下關於嗰個best
15 compliance rule，有啲乜嘢我哋要去注意嘅，當其時我就係在場聽完
16 professor講完之後就開始進行嗰個sampling嘅selection嘅exercise。

17 總共係分為咗兩次嘅，所以有兩次嘅meeting就記錄咗喺度，其實
18 第一次--第一日就做咗EWL slab嗰個sampling selection；第二次
19 就係做NSL slab，再加埋因為喺嗰個sampling selection其實就分開
20 三個階段嘅，第一次就係會係揀選嗰個sampling selection of個D wall
21 panel；第二個就係揀選嗰個number of layers，係bottom layer或者係
22 top layer；第三個抽選就係抽選嗰個setting out of嗰個open-up
23 location，即係話由D wall數出嚟去到幾遠做一個open-up exercise，

1 反覆咁重做，所以用咗兩日嘅--兩次嘅時間去做完成。

2 Q. Yes. I understand. Mr Yeung, could I immediately take
3 you to what I understand actually happened in terms of
4 locations of the opening-up. Could I ask you, please,
5 to be shown -- sir, I don't know whether you've got the
6 hard copies of these, as I requested -- but could you
7 go, please, to OU5.

8 Just so we know where we are, Mr Yeung, 3229 to
9 start with, it's the front sheet of the holistic report.

10 Do you see that? It's just really to orient you,
11 Mr Yeung.

12 A. Okay.

13 Q. If you would be good enough, please, then to be shown or
14 given page 3306.

15 This is appendix B2, Mr Yeung, to the holistic
16 report, and I imagine you might be familiar with this
17 page; is that right?

18 A. Yes.

19 Q. Good. What this is showing, as I understand it,
20 Mr Yeung, is the 28 panels, 28 locations, where
21 opening-up was done?

22 A. Yes.

23 Q. And those 28 were chosen, as I understand it, by the
24 random selection process that you've described?

25 A. 正確，正確。

26 Q. What we can see here, as I understand it, is that there

1 were 14 locations on the West Wall and 14 on the
2 East Wall; yes?

3 A. Yes.

4 Q. What one also sees is that there were two locations only
5 in the Hong Kong Coliseum area?

6 A. 正確。

7 Q. And no locations in area A?

8 A. 正確。

9 Q. If one goes -- first of all, the 28 locations, the
10 number 28, that was proposed and adopted by whom? Was
11 that Prof Yin's figure or somebody else's figure? Where
12 did the 28 figure come from?

13 A. 二十八個位置其實係當初我哋10月submit嗰個holistic proposal嘅時候，
14 其實係就係源於開始嘅時候係應該有嗰個sampling嘅秤把大致上係應該係定咗係
15 八十四粒，而我哋嗰陣時嘅估計就係open up嘅size就係400mm嘅長度，
16 我哋因為嗰個coupler嘅spacing就係150mm，我哋估計就係開一個位置
17 嘅話，就會搵到三粒coupler，以此推算，除出嚟就係二十八個位置，
18 二十八個位置就係咁得嚟嘅。

19 Q. Understood. Yes.

20 Then if we could go one page on in the bundle to
21 3307, Mr Yeung. What we see there is, as I understand
22 it, the result of the random selection process, but this
23 time in relation to the NSL slab.

24 A. Yes, 係, 冇錯。

25 Q. Again, there are 28 locations, but this time they are

Entire Inquiry (Original and Extended)

1 not, as it were, equal on the east and west side;
2 there's 11 on one side and 17 on the other. Do you see
3 that?

4 A. 見到，見到。

5 Q. But, in common with the EWL slab, there are no locations
6 in area A?

7 A. 係。

8 Q. Mr Yeung, are you able to confirm, from your involvement
9 with the random selection process, that there was no
10 conscious decision that area A should be excluded from
11 this process, so is it just coincidence that both on the
12 EWL and the NSL slab there are no locations in area A?
13 What is the position?

14 A. 或者我喺呢度澄清少少，其實喺個random sampling裏面係包括埋area A
15 嘅，只不過喺做呢個隨機抽樣之前我哋都有啲boundary condition話咗畀
16 Professor Yin知嘅，因為喺NSL嗰個位置area A係有啲mass concrete，
17 我哋喺進行open-up嘅就係相對嚟講困難嘅。就喺area A、EWL都有同樣嘅
18 情況。我哋將呢啲資料亦都話埋畀Professor Yin知道，佢喺嗰個--喺佢做
19 嗰個sampling selection嘅動作嘅programme裏面佢都會自動有呢--將呢
20 啲嘢take into account of BD，其實就喺個搞珠嘅過程裏面都係會包括埋
21 area A嗰個位置，呢個就係真係抽唔到咁解啫。

22 Q. Right. So your evidence is that it was included --

23 A. It was included, yes.

24 Q. -- but certain restraints or constraints or potential
25 problems had been identified in area A --

1 A. 冇錯。

2 Q. -- which were conveyed to Prof Yin, and there was some
3 factoring system --

4 A. 冇錯。

5 Q. -- devised by him, the upshot of which was no locations in
6 area A were chosen?

7 A. 我哋係將呢啲資料提供咗畀Hong Kong U個教授，其實就喺個揀選裏面，
8 佢係的而且確係包埋咗area A嘅位置，不過抽選出嚟嘅時候出現個情況就係
9 area A係冇揀選到咁解。

10 Q. Yes, because, Mr Yeung, I'm not a statistician, I'm not
11 an engineer, sometimes I've got some common sense but
12 not always, and what has happened here, rather
13 ironically if one stands back, is that so far as the
14 coupler connections is concerned, no suitable measures
15 are being recommended in any area other than area A, the
16 one area that's never been opened up and tested. Don't
17 you find that just a little bit odd?

18 A. 一開始揀選嘅時候，個結果出現咗，其實喺12月就已經有呢個抽選結果，
19 open-up出現咗咩嘢情況其實係未知之數嘅。Stage 3 analysis亦都係
20 喺6月嗰陣時候先開始做，所以我都解釋唔到會有個--有咁嘅巧合。

21 Q. All right.

22 CHAIRMAN: Sorry, it's not really a -- I suppose you may
23 call it a coincidence. But, as I understand it, and
24 correct me if I'm wrong, special measures are being
25 recommended concerning the coupler connections in

1 area A; okay?

2 A. Yes.

3 CHAIRMAN: But area A is the one area that nobody has looked
4 into physically at all, and there just seems to be
5 either an illogicality or an incomplete exercise.

6 A. Chairman, 其實你而家提起, 我先至醒起會有咁樣嘅結果, 即係之前我
7 一路做嘅時候都有去--而家返去睇, 先至話就係area A要做suitable
8 measures, due to個coupler connection, 但係喺我做嘅過程裏面,
9 每一個step我係跟足番Professor Yin嗰個sampling exercise, 而
10 我哋係跟足番我哋個open-up exercise, 跟住去檢測嗰嘅結果, 而出現
11 咁嘅情況, 跟住擺咗喺stage 3 analysis, 即係每一步都係跟番足個
12 procedure去做, 而個結果就係巧合就係area A需要做suitable
13 measures。

14 CHAIRMAN: Sorry, could you help me again: why did area A
15 need special measures?

16 A. 如果睇番而家嗰個情況, 就係因為area A出現咗一個capping beam嗰個
17 因素, 令到有個combined effect on個coupler嘅connection, 而個
18 combined effect--take into account呢個combined effect,
19 就出現咗一個68%嘅strength reduction, 而導致到area A 需要做
20 suitable measures。

21 CHAIRMAN: All right. Thank you.

22 MR PENNICOTT: Mr Yeung, I think there's no real dispute
23 about this: the conclusion that suitable measures are
24 required in area A has been arrived at through a process

1 of arithmetical calculation, based upon a formula
2 produced by Prof Yin?

3 A. 正確。

4 Q. Now, before we leave -- if you could go back, please,
5 Mr Yeung, to page 3306. I just wonder if you could help
6 me with one other matter while you are here. If you
7 could keep that open.

8 A. Yes.

9 Q. And if we could look, please, at Prof Yin's report -- so
10 that's ER1, tab 12, at paragraph 2.3.4, which in my
11 version is at page 10.

12 Mr Yeung, would I be right in saying that you've had
13 an opportunity of reading Prof Yin's report?

14 A. 望過。[disputed interpretation].

15 Q. All right. Never mind. Let's see how we go.

16 At paragraph -- this is, take it from me, part of
17 Prof Yin's report.

18 Sorry, apparently he said "yes", I'm told.

19 COMMISSIONER HANSFORD: The transcript says, "No, not yet."

20 MR PENNICOTT: Quite.

21 COMMISSIONER HANSFORD: Can you ask the question again?

22 MR PENNICOTT: I certainly can.

23 Mr Yeung, have you had an opportunity of reading
24 Prof Yin's report?

25 A. 有睇過。Is it okay now?

26 Q. That's better.

1 So, at paragraph 2.3.4, what the professor says is
2 this:

3 "For EWL slab, the top connections available for
4 sampling were significantly fewer than those at the
5 soffits. It was considered more appropriate to select
6 sampling units at each group of connections separately
7 on a proportional basis to ensure the sampling units
8 selected would be more proportionally distributed in the
9 4 groups of connections and that random samples from all
10 4 groups will be selected (to enhance representability
11 of the samples). The number of sampling units to be
12 selected from D-wall panels in each group of connections
13 are tabulated below".

14 Now, the first point is -- I imagine there's no
15 dispute -- the D-walls were broken down into four
16 different groups?

17 A. 係。

18 Q. They are listed in this table, and the total number of
19 D-walls in each group is then listed, and then the
20 number of samples within each group is then identified;
21 do you see that?

22 A. (Nodded head).

23 Q. In the first group, which is the EWL East D-wall top
24 connection, there are three; do you see that?

25 A. 見到, 見到。

26 Q. If you look at the diagram, the plan on the other page,

1 at OU3306, would I be right in suggesting that those
2 three are the ones in the light pink colour, that is
3 EH32, EH40 and EH48.

4 A. 呢個我而家唔能夠確定到。

5 Q. Right. If you look at the legend, it says, "Selected
6 panels for purpose ii (top) (4 panels)"; do you see
7 that?

8 A. 見到。

9 Q. What I was going to suggest was that the other one, to
10 make up the four, was WH35, which is on the western
11 side; do you see that?

12 A. 見到。

13 Q. Does that seem logical to you, Mr Yeung, that those are
14 the four, the three I mentioned just now, plus WH35?

15 A. 如果感覺，應該係似係喇。

16 Q. All right. Thank you very much. We can leave that
17 topic there.

18 Could I then just ask you some questions about the
19 task force group. Prof Hansford asked you earlier
20 whether the two meetings to do with sampling, whether
21 they were minuted.

22 Can I ask you another general question: were the
23 task force group meetings minuted?

24 A. 係有meeting minutes嘅。

25 Q. And how frequent were the task force group meetings?

1 A. 喺初初12月開始嘅時候就會大約係一個星期一次，到到後期我哋接近去做呢個
2 HR report 嘅時候，應該係4月尾開始就係daily, daily meeting。

3 Q. Yes. I've certainly seen a document which I can show
4 you, Mr Yeung, which suggests that, for example, at the
5 beginning of May 2019, there were four meetings in the
6 space of about six days.

7 A. 係，每日都開好長時間。

8 Q. Whose idea, whose brainchild, was the setting up of the
9 task force group?

10 A. 其實個task force group嘅成立嘅目的就係因為喺我哋開始做open-up
11 嘅時候，我哋要做submit一啲文件，先先係要得到幾個party嘅approval
12 先至可以進行嘅，主要個就係police同埋BD as approval authority，
13 同埋RDO嘅。

14 喺我哋開始之前，就我係用一個e-mail嘅形式係去seek佢哋嘅approval
15 for個execution of the works，但係就來來--反反覆覆，要好耐時間
16 先至可以能夠攞到個最後--最終嘅approval，所以我哋就提出嚟話咁樣去，
17 就時間上就應該唔容許，不如我哋就call一個group，就係主要個main task
18 member就嚟attend個meeting，有啲咩issues要改動嘅，要進行嘅，即時
19 就喺個會議上就agree，跟住就會implement on site。呢個就係當初喺10月
20 嘅時候個個目的。

21 到到後期，自然去咗4月、5月之後，個開會嘅次數頻繁咗，因為我哋有個
22 timeline就要喺6月尾要交個HR同HB report嘅，相對嚟講，變咗我哋會更加
23 緊要日日都坐喺度傾，去完成呢個報告。

1 Q. So the short answer to my question is that you suggested
2 the setting up of the task force group; is that right?

3 A. 我唔係好記得係咪嚟自我，即係大家都有咁樣嘅意思，因為instead of
4 喺e-mail度來來往往，不如就大家坐埋一齊好過淨係用e-mail形式嚟
5 communicate。

6 Q. Yes, I understand the rationale and that's very helpful,
7 Mr Yeung.

8 Just a minor point. Why was it necessary for the
9 police to be involved?

10 A. 我印象中記得當其時就一開始話又要open up嘅時候，police有個睇法，
11 就係佢認為嗰個類似係一個crime scene嘅形式，所以佢當其時就嚟我哋
12 open up嗰陣時候，police都擺咗好人手分駐咗每一個位置度，其實連
13 我哋喺開鑿嘅時候，每一個位置，police嘅同事都要在場望住我哋，我哋
14 先至可以開始break out個concrete嘅，即係相當之嚴謹嘅，包括埋我哋
15 做個setting out for嗰個位置，都要得到police望過，影埋相，跟住
16 畀個approval，我哋先至可以開鑿，呢個就係嗰個當時嘅實際情況，所以
17 有需要，真係要大家每日都見面，坐喺度，先至--如果唔係，就嗰個--整個
18 過程會相對嚟講，會拖得好慢。

19 Q. Yes. I see. All right. And from the government's
20 side, we know that the expert adviser team were --
21 either all of them or at least one of them, I'm not sure
22 which -- also members of the task force group; that's
23 right, is it?

24 A. 佢哋並唔係常客，有需要嘅時候佢哋會出現，喺開始我哋傾我哋個sampling

1 strategy嘅時候，佢哋有出現，到到後期中間嗰度，我哋遇到一啲難題，
2 譬如揀--去到--例如話我哋掘到去第三浸layer我哋掘唔到，根據個best
3 compliant rule，有啲唔清晰嘅地方，我哋都會invite Hong Kong U
4 嘅professor落嚟畀一個advice我哋應該點樣去繼續進行嗰個挖掘。

5 到到後期，就去到後尾去定嗰個sampling嘅criteria，
6 即係揀選個pass and fail嘅時候，我哋都有invite到professor嚟作
7 一個講解，就係邊個、點樣去界定嗰個sample係咪一個invalid sample
8 定係一個valid sample，呢個佢都有參與。

9 Q. Okay. Mr Yeung, did the task force group itself have
10 a hand in writing the holistic proposal or the
11 verification proposal?

12 A. 據我印象中，就係個task force group...

13 Q. Proposal, not report, the proposal.

14 A. ...係應該有參與到嗰個holistic proposal嘅，因為task force
15 group係12月之後先至成立嘅。

16 Q. And did the task force group have a hand in actually
17 compiling and writing the holistic report and the
18 verification report?

19 A. 喺我哋draft個holistic report同埋個VR report嘅時候，我亦都有
20 將我哋嘅draft嘅report交界task force member去comment嘅，因為
21 佢哋有意見嘅時候，我哋都會考慮去incorporate落去我哋個report度，
22 呢個過程係佢哋有參與去畀comment同畀意見。

23 Q. Can I ask you, please, to look at a document with me.
24 It's DD10. It's at 12771. It should be a letter of

1 13 June 2019 from Mr Chan of Highways or RDO to
2 Mr Bayliss, the project director at MTR; do you see
3 that?

4 A. 見到，見到。

5 Q. And it's referring to "the holistic proposal for
6 verification and assurance of as-constructed conditions"
7 and so forth. Indeed, it's referring to the holistic
8 proposal and the verification proposal. Do you see
9 that?

10 A. 見到。

11 Q. And it's enclosing some minutes of a meeting that took
12 place two days earlier, on 11 June, the minutes of which
13 we do have, and they are at page 12773. Do you see
14 that, Mr Yeung?

15 A. 見到。

16 Q. It's a meeting that you attended; do you see that?

17 A. 冇錯。

18 Q. And this is the part of a process, as I understand it,
19 Mr Yeung, whereby the MTR is discussing with government,
20 the expert advisory team; we can see both the holistic
21 report or drafts of the holistic report and drafts of
22 the verification report?

23 A. 冇錯。

24 Q. And this is not, as I understand it, this meeting, not
25 a meeting of the task force, the task force group. This

1 is a separate, as it were, ad hoc type of meeting?

2 A. 冇錯，係。

3 Q. And at 1.1 the minutes say this:

4 "These parts of the draft final report were
5 generally acceptable [that's stages 1 and 2] and the
6 government would provide detailed textual comments for
7 refinement."

8 Then two issues need to be resolved which are then
9 identified.

10 If you look at the heading "Stage 3" and then you
11 look at the minute at 1.3, what's recorded here -- and
12 I suspect that these are minutes prepared by the
13 government, obviously -- it says this:

14 "The government commented that the draft final
15 report on stage 3 submitted ... on 3 June ... was not in
16 proportion with the parts on stages 1 and 2, and lacked
17 sufficient details for readers to understand the
18 thinking process and how the conclusions were arrived at
19 with sound justifications. The government further
20 highlighted that the stage 3 task force had in the past
21 two months painstakingly worked out a version of [the]
22 draft final report (last version circulated on 30 May
23 2019) (TF version) which had largely been in agreement
24 on the contents."

25 Is it right that the task force had itself
26 painstakingly worked out a draft of the final report?

1 A. 或者我喺呢度要澄清少少嘅，個task force group去到3、4月嘅時候，
2 其實我哋已經係分為兩個team嘅，一個team嘅task force就係focus喺
3 我哋stage 2嘅exercise所做嘅report；另一個task force就係個
4 Design team佢take個lead，就係去傾個stage 3嘅assessment嘅。

5 頭先你所提到個comment on嗰段嘢應該係關於個stage 3
6 report嗰個過程，就嗰個就係喺個task force度就我係好少參與，我主要
7 就係做stage 1同stage 2嗰個report嘅task force。

8 Q. Who was involved in the stage 3 task force, Mr Yeung?

9 A. 係我哋一個同事，就係Thomas。

10 Q. He was involved with members of the government and the
11 EAT and the police as well; is that right?

12 A. 據我所知，應該police就有參與個task force on個stage 3，RDO嘅
13 BD同埋EAT都有參與。

14 MR PENNICOTT: Thank you.

15 COMMISSIONER HANSFORD: Presumably this colleague Thomas --
16 was he at this meeting? Would he be listed in the list
17 of attendees?

18 MR PENNICOTT: It could be Thomas Lau.

19 A. 有，Thomas Lau。

20 COMMISSIONER HANSFORD: Thomas Lau. Thank you.

21 MR PENNICOTT: He's the chief design manager.

22 A. (Nodded head).

23 MR PENNICOTT: Thank you, sir.

24 Mr Yeung, without pressing you too far -- it's not

1 my job to do so -- would you agree with this
2 proposition, that the task force group, admittedly
3 containing MTR representatives but also the government,
4 the EAT in particular, had a significant influence on
5 the contents of the holistic report and the verification
6 report?

7 A. 可以咁講，因為頭先我同事提到，其實整個report最終個目的就係我哋要令--
8 去完成個report，令到我哋有--可以完成到code compliance同埋附合BO
9 個requirement，我哋先至能夠順利咁去submit個BA14，而task force
10 member裏面好明顯就係有RDO嘅同事，亦都有BD嘅同事，佢哋都係個
11 approval authority，佢哋嘅comments、意見我哋應該--我哋係要--
12 需要係去考慮同埋接納。

13 Q. I'm told, Mr Yeung, that at the beginning of that answer
14 you used the words, "You can say so." Is that correct?

15 A. 我應該有印象有咁樣嘅句子出現過。

16 MR PENNICOTT: All right. Just give me one moment.

17 If there's anything else Mr Shieh wants to ask you
18 about with those minutes, I'll leave him to do it.

19 Thank you very much, Mr Yeung. I have no further
20 questions.

21 Cross-examination by MR SHIEH

22 MR SHIEH: Good afternoon, Mr Yeung. I represent Leighton.

23 I have a few questions for you.

24 Would you agree with this proposition, that the task
25 force group, admittedly containing MTR representatives

Entire Inquiry (Original and Extended)

1 but also the group, the EAT in particular, had
2 a significant influence on the content of the holistic
3 report and the verification report?

4 A. 頭先都講過，就BD同埋RDO都係個approval authority，個report最終
5 都係要得到佢哋嘅acceptance，換句話說，佢哋個comments、advice
6 我哋真係要認真去take into consideration。

7 Q. Because, after all, the purpose of the report is to
8 persuade the government departments to grant approval;
9 correct?

10 A. 個report最後要佢哋accept，個HR report同BD report都要得到RDO
11 嘅acceptance。

12 Q. And the views or the content of the report had to find
13 favour, for example, with the Buildings Department?

14 A. 係咪in favour to Buildings Department，我就...

15 Q. "Acceptable to".

16 A. 冇錯，acceptable to BD officer--BD authority。

17 Q. So let's be realistic about it: if the BD has indicated
18 a certain preference for certain matters to be dealt
19 with in a certain way, it would be unrealistic for the
20 MTR to prepare the holistic report, other than to follow
21 the views of the Buildings Department?

22 A. 其實個task force meeting都畀到一個forum我哋去discuss同埋去
23 討論下所提出嚟嘅意見可以點樣處理，即係唔係話你所講BD講乜嘢我哋都會
24 接受晒，有啲情況我哋係都有我哋嘅意見反映畀BD，at the end，佢哋

1 都會去take note同埋都會接受。

2 Q. If there is a point on which, despite your persuasion,
3 the Buildings Department stood firm, then realistically
4 the MTR is not going to prepare a holistic report which
5 goes against a view which the Buildings Department had
6 insisted upon; right?

7 A. 如果個report最終係RBD或者RDO有意見嘅，好明顯就係個outcome就係
8 佢哋唔會accept我哋嘅report。

9 Q. Therefore, in order for the report to be acceptable to
10 them, in case of conflict which cannot be resolved, the
11 MTR would choose to go along with the view of the
12 Buildings Department?

13 A. 嗰個task force meeting嘅目的就係畀機會我哋去討論同埋最後得出
14 一個agree嘅方案，係大家都可以接受。

15 Q. I'll try again. In reality, if people can agree, then
16 they can agree, but if deep inside you don't agree, then
17 the Buildings Department persists, then you have no
18 choice but to appear to agree?

19 A. 某程度上總有方法係做到一個地步係雙方都agree嘅。

20 Q. Now, when Mr Pennicott was discussing area A with you,
21 you mentioned that there were certain boundary
22 conditions in area A which might make it difficult for
23 the purpose of accessing area A to take samples; you
24 remember that?

25 A. 係，記得。

1 Q. You mentioned that these boundary conditions were
2 notified to Prof Yin?

3 A. 冇錯。

4 Q. Were you aware whether anything was done by Prof Yin to
5 take those boundary conditions into account in
6 designing -- or in deciding the precise locations for
7 choosing samples?

8 A. 呢個我就唔清楚，因為去到嗰個會嘅時候，就Hong Kong U嘅professor
9 只係講解個流程、嗰個sampling嘅methodology，我相信佢已經take
10 into account of我畀佢嘅資料關於有某些地方係assess唔到嘅，或者
11 係做唔到嘅，個位置，我只係將啲資料話畀佢知，至於佢點樣喺佢個
12 programme去做呢個動作，我就唔清楚。

13 Q. Help me with this. In theory, are you suggesting that
14 area A is as available for sample-taking as any other
15 area, in theory? Is that what you understand to be the
16 case?

17 A. 據我印象所知，就係喺個挑選sample裏面嘅area A都係其中一個揀選嘅
18 位置嚟嘅，佢個sample可能會少啲可以揀選，但係佢係亦都有份擺落去。

19 Q. What do you mean by "samples which could be chosen were
20 limited"?

21 A. 係佢一個當初嗰二百幾個panel去隨機抽選嘅時候，area A都係其中一個
22 份子嚟嘅。

23 Q. But you were not aware whether anything was done in
24 designing the actual sampling so that the chances of
25 area A being picked might be lower?

1 A. 呢個佢點樣去做我就唔清楚，我只不過係將我所知嘅資料話畀 professor
2 知道 area A 邊個位置係有啲困難。其實除咗呢度之外，個 D wall，我
3 亦都話畀佢聽就係有啲 D wall 喺我哋個 --make 咗個 change，個 top
4 coupler 係換咗做 through bar 嘅，嗰啲揀嚟，都係做唔到嘅，佢都
5 take note of 呢個 information 嘅。

6 Q. Can I ask you to look at the MTRC report. COI 1 at
7 paragraph 5.

8 Here, it says:

9 "It is important to note at the outset that both the
10 holistic proposal and the holistic report were not
11 intended to address issues from only a public safety
12 perspective. Rather, they were prepared to address the
13 issues and non-conformances identified in the
14 construction of the Hung Hom Station Extension from
15 a code, contractual and statutory compliance perspective
16 with a view to obtaining the requisite approval from the
17 relevant authorities ..."

18 Do you see that sentence?

19 A. 見到。

20 Q. And you see the reference to "code, contractual and
21 statutory compliance perspective"; do you see that?

22 A. 見到。

23 Q. Now, remember that concept. We have used the loose
24 terminology of "code compliance" in this hearing, but
25 let's take that to be a shortform for "code, contractual

1 and statutory compliance"; okay?

2 A. Mmm.

3 Q. Can I then ask you to look at paragraph 36 of the same
4 report:

5 "Between December 2018 and January 2019, a number of
6 meetings were held and attended ... to discuss the
7 acceptance criteria for assessing whether a coupler
8 connection passed or failed for the purpose of the
9 binomial analysis. Having discussed the matter at
10 length, the government advised and MTRCL adopted
11 an engagement length of no less than 40 millimetres by
12 direct measurement and no less than 37 millimetres by
13 PAUT as the acceptance criteria ..."

14 Do you see that?

15 A. 見到。

16 Q. You were present at those meetings?

17 A. 有啲有，有啲冇，我唔係好記清楚邊個有、邊個冇。

18 Q. Fair enough. Can you look at paragraph 34:

19 "Insofar as the acceptance criteria are concerned,
20 by a press release dated 24 December 2018 the government
21 stated its position that, according to the information
22 from BOSA, the proper installation requirements of
23 a coupler were: (i) there should be a maximum of two
24 full threads exposed; and, (ii) the embedded length of
25 the threaded steel bar inside the coupler should be at
26 least 40 millimetres in length. The government

1 considered that the couplers should be installed in
2 accordance with the above requirements."

3 Do you see that?

4 A. 見到。

5 Q. Now, at the time you prepared the holistic proposal,
6 were you aware of this position publicly pronounced by
7 the government?

8 A. 嗰陣時係未知，即係喺12月4號我哋交我哋個holistic proposal
9 嘅時候，呢個press release都未出。

10 Q. But as we can see from paragraph 36 the government in
11 fact put forth advice: "an engagement length of no less
12 40 millimetres by direct measurement and no less than
13 37 millimetres by PAUT as the acceptance criteria for
14 the purpose of the binomial analysis."

15 So, at the very least, by the time of the meetings,
16 you were aware that that was the advice or position
17 taken by the government?

18 A. 冇錯。

19 Q. Now, tell us if you do not know the answer. Under what
20 code, contract or statute is the requirement of
21 40 millimetres embedded length laid down?

22 A. 據我個理解，就係喺BD嘅authority裏面，就佢有個data bank就係keep
23 咗一啲material嘅--approved material，而BOSA coupler就係其中
24 一個喺佢嘅BD嘅data bank裏面嘅，喺嗰面相信BD得到嘅資料就係from
25 呢個data bank，個coupler就係--一個BOSA嘅合規格嘅coupler就應該

1 係一個40mm full engagement嘅coupler就為之係一個合規格嘅coupler。

2 Q. Does the data bank -- again if you do not know the
3 answer, tell us. Is the data bank about BOSA couplers
4 a code, a contract or a statute?

5 A. 我唔係好確定係under邊一個範疇，唔確定。

6 Q. Can I ask you to look at COI 1. Can we look at the
7 COI 1 bundle C10, at 7011.

8 This is a BOSA pamphlet or document. Can you look
9 at 7013. Have you seen this BOSA document?

10 A. Yes, 見過。

11 Q. "Summary":

12 "After connection has been fully tightened, one
13 should see a maximum of two full threads to ensure
14 a proper installation."

15 Do you see that?

16 A. 見到。

17 Q. Can you turn to 7016. I think one is dealing with
18 ductile, the other is non-ductile, but it doesn't matter
19 because here we also see:

20 "After connection has been fully tightened, one
21 should see a maximum of two full threads to ensure
22 a proper installation."

23 Do you see that?

24 A. 見到。

25 Q. Are you aware of any specification in the BOSA materials

1 which stipulated 40 millimetres' embedded length? It
2 may not be here. I'm just asking you as a matter of
3 fact. You don't have to feel obliged to give an answer,
4 because it may not be within your area of knowledge.

5 A. 我自己除咗喺BD，1月10號畀封信我哋見到呢個之前，我係冇見過呢個
6 40mm嘅呢個數字。

7 Q. So you relied on the say-so of Buildings Department to
8 guide you as to what you thought to be code
9 requirements; correct?

10 A. Code requirement rely on BD嘅advice，都應該係好正確。

11 Q. But you would accept, would you not, the BD may be right
12 or it may be wrong in its understanding of requirements
13 of code or statute or contract; correct?

14 A. 喺BD畀我哋嗰封信，佢都有attach到BOSA回答畀BD澄清番個一個
15 合規格嘅coupler嘅installation應該係咩嘢狀況，喺BOSA亦都有提到，
16 就係一個full engagement就係十個thread，即係40mm。

17 Q. That may or may not be what BOSA said, but in terms of
18 the regulatory framework, such as contract, code or
19 statute, where does a BOSA specification fit in?

20 Let me start again. As a construction professional,
21 are you aware of any code of practice, whatever, which
22 stipulates a requirement to comply with 40 millimetres'
23 embedded length or two threads maximum exposed?

24 A. 呢個我亦係--應該係唔aware有呢啲咁樣嘅code requirement，頭先我
25 講過，就係BOSA係一個material嘅case，當任何一個material嘅

1 instrument需要擺到BD嘅approval，佢就會去同BD申請，當然佢應該
2 會畀埋個catalogue畀BD，「呢個就係我個product，我想係成為一個
3 approve嘅material。」佢當然會提到就係點為之叫做一個規格嘅，BD
4 淨係會畀出佢嘅要求，BD嘅要求就係佢要meet到個tensile strength，
5 佢要meet到個cyclic loading test，佢要meet到個elongation，
6 我相信就係BOSA嘅material就係要achieve到40mm full engagement
7 先至achieve到呢個criteria。

8 Q. I've asked this question of your colleague Mr Ng this
9 morning, but I will ask you again. You are aware that
10 this Commission of Inquiry has heard some evidence from
11 engineering experts about the extent of embedded length
12 required to achieve safety; are you aware of that?

13 A. 知道。

14 Q. Are you aware that the experts have given various
15 numbers in terms of embedded length as to the minimum
16 embedded length required to achieve safety?

17 A. 都知道。

18 Q. 26-point-something millimetres, 28; you've heard of
19 those numbers?

20 A. 知道。

21 Q. Unconstrained by what BOSA stipulated in the document --
22 they have looked at some results and they have expressed
23 some views -- you are aware of that?

24 A. 知道。

1 Q. But then, for the purpose of arriving at an acceptance
2 criterion, have you, as a matter of fact, had any regard
3 to the views of experts who expressed their views on the
4 minimum embedded length required, or have you not?

5 A. 知道，亦都，但係個...

6 Q. Have you had regard to those or have you not had regard
7 to those?

8 A. 其實佢嗰個on個strength佢係達到safety嘅要求，但係佢始終meet
9 唔到嗰個elongation嘅requirement。

10 Q. Is elongation requirement a relevant aspect for the
11 purpose of the Hung Hom Station?

12 A. 呢個requirement係stipulate咗喺BD嘅requirement裏面，係
13 一個accepted letter on呢個我哋--on呢個，我哋use of呢個
14 mechanical coupler所要嘅其中一個要求，我哋一定要fulfil。

15 Q. You would accept, would you not, that what may be the
16 requirement of Buildings Department, in terms of what
17 you call code compliance, may not be the same as what is
18 required in terms of safety?

19 A. 如果純粹係講safety，而唔講code compliance，可以咁講。

20 MR SHIEH: Thank you very much.

21 I have no further questions.

22 MR KHAW: Chairman, a few questions. I wonder whether it's
23 a convenient time for a break.

24 MR PENNICOTT: I think so.

25 CHAIRMAN: Yes. That sounds good. Quarter of an hour.

1 (3.49 pm)

2 (A short adjournment)

3 (4.09 pm)

4 Cross-examination by MR KHAW

5 MR KHAW: I am acting for the government. There is just one
6 matter I wish to very briefly clarify with you.

7 You have told us that area A actually has formed
8 part of the sampling exercise; is that correct?

9 A. 係，冇錯。

10 Q. When you discussed area A with other counsel, you also
11 told us that there are some, I think in your words,
12 boundary restrictions regarding area A; is that correct?

13 A. 冇錯。

14 Q. When you talk about the boundary restrictions, in fact
15 you are talking about the fact that area A is not
16 accessible due to blockage of access by some existing
17 mass concrete; is that correct?

18 A. 冇錯。

19 Q. Just as a matter of illustration, if I can ask you to
20 take a look at Original Inquiry bundle H534. If we can
21 blow it up a little bit and just focus on the middle, we
22 can some shaded area described as "Mass concrete fill",
23 and then there's a density number; do you see that?

24 A. 見到。

25 Q. By looking at this document, can you explain what you

1 said about the blockage of access by existing mass
2 concrete infill between EWL slab and NSL slab?

3 A. 喺圖中見到，有啲位置，例如話喺近住D wall嗰個位係全個位置都係畀啲
4 mass infill係fill up晒嘅，即係換句話說，如果我哋要打開去open up
5 嗰個soffit side of呢個slab，原則上係需要成個mass concrete
6 挑開㗎，先至有機會去做到，呢個其中一個constraint嚟嘅。

7 其實喺EWL level都有類似嘅情況，有啲會比其他個南--partition
8 嘅screen wall擋住㗎令到我哋嘅access係入唔到去個位置係去做一個
9 open-up exercise嘅。

10 Q. Sorry, may I have a moment?

11 You just referred to a possible case that if you
12 were to open up the soffit side of the slabs. Can you
13 actually point to that side by referring to this
14 document?

15 A. 呢一個嘅位置(indicating)。

16 Q. And what about NSL, the same part regarding NSL; can
17 you ...

18 A. 呢個位置(indicating)。

19 NSL就係喺呢個位置(indicating)。

20 Q. I thought it should be the lower --

21 A. The lower, 呢個位置, sorry, 呢個位置。

22 Q. Yes, that's the NSL.

23 A. 冇錯。

24 MR KHAW: Thank you. I have no further questions.

1 MR BOULDING: Sir, I have no re-examination, unless you have
2 any questions.

3 Questioning by THE COMMISSIONERS

4 COMMISSIONER HANSFORD: Yes, I've got one.

5 So, Mr Yeung, on the report, the MTR report on
6 statistical analysis relating to the Original Inquiry,
7 you were one of the authors of this report, I believe;
8 is that correct?

9 A. Holistic report, yes.

10 COMMISSIONER HANSFORD: Can we turn to it, and can we turn
11 to paragraph 48, page 19.

12 A. 係。

13 COMMISSIONER HANSFORD: As I understand it, reading
14 paragraph 48, it's telling us that since the submission
15 of the holistic report, MTR is looking at optimising the
16 recommended suitable measures.

17 Then if we go over the page, we've got items (1),
18 (2) and (3), where the suitable measures is likely to be
19 reduced in area A from 65 metres to 25 metres; in shear
20 links, there's a reduction or likely reduction from not
21 more than 2.5 per cent to approximately 1 per cent; and
22 in the construction joints, the extent of the measures
23 will likely be the same as that recommended in the
24 holistic report.

25 What has caused this reduction? Where has this
26 reduction come from?

1 A. 喺我哋個stage 3 assessment，提到話喺preliminary嘅analysis
2 裏面，就計出嚟area A有需要65 metre長嘅地方需要去做呢個
3 suitable measures，但係去到後期我哋而家進入呢個detailed
4 design submission畀BD 嘅時候，我哋design team或者DDC嘅同事
5 就喺嗰個moment redistribution嗰方面就做咗一啲調整，就令到嗰個
6 extend of suitable measures係相對係減細咗好多，呢個係其中
7 一個嘅method。

8 COMMISSIONER HANSFORD: So did you say these suggestions are
9 being made by the BD design team?

10 A. No，我哋嘅MTRC嘅DDC Atkins，DDC，detailed design consultant。

11 COMMISSIONER HANSFORD: DDC. So these items are still under
12 consideration, are they?

13 A. 冇錯，係。

14 CHAIRMAN: Sorry, so Atkins are considering making these
15 design alterations?

16 A. Atkins係做緊一個fine-tuning on個design calculation，去
17 儘量去minimise嗰個extend of suitable measures。

18 CHAIRMAN: Okay.

19 COMMISSIONER HANSFORD: Has that been approved by BD?

20 A. 未，未，我哋做緊submission，未approve。

21 COMMISSIONER HANSFORD: Okay.

22 CHAIRMAN: But you are submitting?

23 A. That's right.

24 CHAIRMAN: Thank you.

1 COMMISSIONER HANSFORD: Thank you.

2 MR BOULDING: Thank you very much, Mr Yeung.

3 That's our evidence for today, Chairman.

4 CHAIRMAN: Thank you very much.

5 Thank you very much indeed. Thank you for
6 attending.

7 WITNESS: Thank you.

8 CHAIRMAN: You've been very helpful and you are excused now.
9 Thank you.

10 WITNESS: Thank you.

11 (The witness was released)

12 MR PENNICOTT: Sir, on that very last point that

13 Prof Hansford raised with the witness, of course the
14 Commission has, through MTRC, been advised of the
15 process by which the design of the suitable measures is
16 being refined from time to time, and obviously the
17 Commission has asked to be kept informed of progress and
18 what is happening, and I think, as I understand it, that
19 is indeed what is happening at the moment.

20 I suppose there is a hope, perhaps, rather than
21 expectation that by the time we come to hear the
22 structural engineering evidence in January, perhaps
23 things will have moved on, perhaps crystallised in
24 a much more certain sense than they are at the moment.
25 As I say, that's perhaps more hope than expectation, but
26 let's leave our fingers crossed.

1 MR BOULDING: Sir, just on that point, if I can remind you
2 and my learned friend about Mr Ng's witness statement.
3 In paragraph 25 he says:

4 "I note the Commission has asked to be kept updated
5 on the design and implementation of the suitable
6 measures. MTR will do so and has already provided
7 an initial update. Further updates will be provided on
8 a monthly basis, as requested."

9 I can obviously see that this is very important, and
10 those behind me no doubt will impress upon MTR how
11 important it is that, if we can improve upon that, we
12 will do that, for obvious reasons.

13 CHAIRMAN: Thank you.

14 MR PENNICOTT: That's what I had in mind. Thank you very
15 much for the references.

16 CHAIRMAN: Thank you.

17 May I also mention -- with Mr Ng, I mentioned that
18 he had been one of the MTR staff members who had
19 escorted Prof Hansford and myself on a visit, and
20 Mr Yeung was another. It's my fault for not mentioning
21 it earlier. But again, along with all the other staff
22 members, he dealt with the two of us with impeccable
23 professionalism and at arm's length in all respects.
24 Thank you.

25 H O U S E K E E P I N G

26 Tomorrow morning I think we are not sitting, is that

1 right, because we are waiting for the contact with
2 London?

3 MR PENNICOTT: Sir, that's right, which as presently advised
4 will be at 3 o'clock.

5 CHAIRMAN: And how -- I know it's a difficult one but how
6 long do you imagine you are likely to be?

7 MR PENNICOTT: Sir, can I mention this. We have invited the
8 parties to indicate how long they will be in
9 cross-examination of -- let's start with Dr Wells
10 because that's obviously the immediate issue. The
11 government have indicated that they will be about two
12 and a half hours with Dr Wells. I understand that the
13 MTR have verbally informed us today that they will be
14 between zero and 30 minutes, depending, I imagine, on
15 the cross-examination of the government.

16 CHAIRMAN: Okay.

17 MR PENNICOTT: I'm bound to say I have not got a clue how
18 long I'm going to be, other than I don't think I'm going
19 to be very long. I would suspect maybe 15 minutes to
20 half an hour, because I'm very much going to be
21 listening to the government's cross-examination of
22 Dr Wells.

23 CHAIRMAN: Yes.

24 MR PENNICOTT: I've got my list of points that I want to
25 raise but hopefully I'll be ticking them off as Mr Khaw
26 is cross-examining so that I won't need to trouble ...

1 CHAIRMAN: All right, so ...?

2 MR PENNICOTT: Sir, what I think the upshot of that probably
3 means is that we are, unfortunately, probably going to
4 have to trouble Dr Wells on Thursday as well as
5 tomorrow, but obviously we will see how things go
6 tomorrow.

7 MR BOULDING: Sir, just on that, can I put down a marker and
8 reserve my position. It's absolutely right that at the
9 moment, it looks to me as though it's nought to
10 30 minutes so far as my questions are concerned, but you
11 will be aware of the fact that you've made a direction
12 that Dr Wells produces all sorts of information by
13 6 o'clock this evening, and conceivably that might
14 affect what I question on.

15 CHAIRMAN: Of course.

16 MR BOULDING: And it may well be that my learned friends for
17 the government think that it could affect what they ask
18 him about as well. That's a matter for them. But I put
19 down my marker.

20 CHAIRMAN: Yes, thank you.

21 Mr Khaw?

22 MR KHAW: Mr Chairman, obviously on that point it really
23 depends on the volume of further information that we
24 receive tonight, but we are keen to start because we
25 don't want to waste time -- we are keen to start
26 tomorrow afternoon. But of course subject to what we

1 receive from Dr Wells this evening, there's just
2 a possibility that I wish to also put a marker down, and
3 that is if we cannot go through all the materials
4 provided by Dr Wells tomorrow and also Thursday, there's
5 a possibility that we may need to continue
6 cross-examining him in October, if there can be a time
7 slot available to us. That's just a possibility. But
8 we will try to finish as much as we could, after
9 digesting the materials that we receive tonight.

10 CHAIRMAN: All right. Thank you very much.

11 When, then, would we be thinking of finishing
12 tomorrow with Dr Wells?

13 MR PENNICOTT: Sir, my understanding is we are only sitting
14 until 5 o'clock. We have two hours from 3 o'clock until
15 5 o'clock tomorrow afternoon, and then the same -- sir,
16 there are practical problems with sitting beyond
17 5 o'clock tomorrow evening. I don't think those same
18 problems arise on Thursday, should it be necessary, but
19 there are practical problems so far as tomorrow is
20 concerned.

21 CHAIRMAN: All right.

22 MR PENNICOTT: So what one is hoping for, if there's all
23 plain sailing and neither the government nor MTRC are
24 prejudiced by the information that's going to come
25 through from Dr Wells this evening, we trust, is that we
26 will have Dr Wells tomorrow afternoon and it sounds like

1 Thursday afternoon as well, and then on Friday we will
2 have Prof Yin. That's the ideal situation and then all
3 the statistical evidence will be finished.

4 The problem will be if we run into difficulties, for
5 whatever reason, on Dr Wells, because the question then
6 is what do we do with Dr Wells if he's got to be held
7 over and then what do we do about Prof Yin? That is my
8 concern. But let's not worry about those problems until
9 they arise.

10 CHAIRMAN: On Thursday we've got more elasticity, have we,
11 in time?

12 MR PENNICOTT: I'm afraid we have, sir. It's going to be
13 another 3 o'clock start on Thursday.

14 CHAIRMAN: Then we can go through until 6.30 if necessary?

15 MR PENNICOTT: I don't believe or I haven't been advised any
16 practical problems arise on Thursday but I have been
17 advised there are practical problems tomorrow.

18 CHAIRMAN: All right.

19 MR PENNICOTT: What I had discussed with Mr Khaw, albeit
20 briefly, was whether there was any sense in trying to
21 interpose Prof Yin sort of in the middle of Dr Wells,
22 but it seemed to me that was far too complicated and
23 might give rise to all sorts of issues that will make
24 things worse rather than better.

25 CHAIRMAN: No. I agree with that.

26 So the way forward for this week then is tomorrow we

1 start at 3.00, so everybody be here at, say, 2.30,
2 and -- remind me, have we done a videolink before?
3 I think we have. We had a couple of the Australian
4 gentleman from Leightons, and we've done London.

5 MR PENNICOTT: The videolink is being organised by the
6 Hong Kong Trade Office in London, which I think is the
7 same location as was used previously, so fingers
8 crossed.

9 CHAIRMAN: Okay. So that's tomorrow afternoon then. If
10 everybody could be here at about 2.30 so we can get
11 started.

12 And then again on Thursday --

13 MR PENNICOTT: Similarly.

14 CHAIRMAN: -- similarly. Then Friday the full day for the
15 professor?

16 MR PENNICOTT: We hope, if all goes smoothly.

17 CHAIRMAN: Okay. Good. Then that should deal with what we
18 have termed the statistical evidence.

19 MR PENNICOTT: Yes, sir.

20 CHAIRMAN: Excellent.

21 Thank you very much indeed. Tomorrow, 2.30.

22 (4.29 pm)

23 (The hearing adjourned until 2.30 pm the following day)

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