IN THE HIGH COURT OF THE REPUBLIC OF SINGAPORE

[2019] SGHC 285

Suit No 316 of 2015

Between

Yew San Construction Pte Ltd

… *Plaintiff*

And

Ley Choon Constructions and Engineering Pte Ltd

… *Defendant*

JUDGMENT

[Building and Construction Law] — [Subcontracts] — [Claims by subcontractor]
[Building and Construction Law] — [Scope of works]
[Building and Construction Law] — [Liquidated damages]

TABLE OF CONTENTS

Yew San Construction Pte Ltd
v
Ley Choon Constructions and Engineering Pte Ltd

[2019] SGHC 285

High Court — Suit No 316 of 2015
Quentin Loh J
12, 20–22, 26–27 September 2017, 7–9, 13, 14 February 2018; 18 April 2018

5 December 2019 Judgment reserved.

Quentin Loh J:

Introduction and the Parties

1 The plaintiff, Yew San Construction Pte Ltd ("Yew San"), is a contractor in the construction business of civil engineering projects,[1] with a particular focus on earthworks. At the material time, Yew San had been handling earthworks subcontracts for more than ten years.[2]

2 The defendant, Ley Choon Constructions and Engineering Pte Ltd ("Ley Choon"), carries on the business of civil engineering construction and the

---

1 Statement of Claim (Amendment No 1) at para 1.

2 Tr/21.09.17/11/23–25.

manufacture of asphalt and construction materials.[3] Ley Choon is a specialist pipe work contractor.[4]

3 Ley Choon secured a contract dated 7 January 2010 ("the Main Contract"), from the Changi Airport Group (Singapore) Pte Ltd ("CAG") as the main contractor for the construction of an aircraft parking apron, associated taxiways and ancillary works for Seletar Airport; this included earthworks, drainage, pavement, fencing and other related works.[5] The total contract price of the Main Contract was $31,438,109.00.[6]

4 By a subcontract ("the Agreement"), Ley Choon subcontracted various earthworks to Yew San. While the Agreement is undated, the parties agree that it was signed sometime around April 2010.[7] The Agreement was a lump sum contract for $2,280,000.00, payable in instalments based on the monthly progress claims made by Yew San to Ley Choon.[8]

5 Disputes have arisen between the parties. It is undisputed that Ley Choon has paid Yew San $959,000.00 and a balance of $1,321,000.00 remains unpaid.[9] Yew San claims the balance sum outstanding under the Agreement. Ley Choon's position is that the plaintiff failed to complete the subcontract

---

3 Statement of Claim (Amendment No 1) at para 2; Defence and Counterclaim (Amendment No 1) at para 2.

4 Tr/12.09.17/69/1–4; Tr/22.09.17/85/17–19.

5 Koh Soo Ghim's 1st AEIC dated 3 July 2017 ("KSG-1") at para 7.

6 1.AB 104.

7 Leo Kim San's 1st AEIC dated 3 July 2017 ("LKS-1") at para 2; KSG-1 at para 11.

8 Tr/20.09.17/20–21.

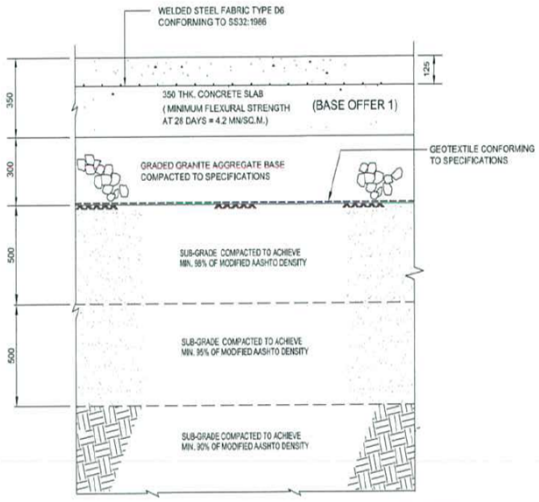
9 Statement of Claim (Amendment No 1) at para 17.

works, and counterclaims for costs incurred in completing those works, an indemnity in respect of liquidated damages for delay imposed by the project employer and various other sums.

The taxiway construction works

6 While the parties join issue on the scope of their respective works, the overall sequence of the taxiway construction works is largely undisputed. In order that the taxiways and parking apron achieve the minimum load-bearing capacity required to support aircraft operations, the taxiway pavement must be built on several layers of material compacted to specific densities, described in terms of a percentage of the material's "modified AASHTO [American Association of State Highway and Transportation Officials] density".[10] A cross-sectional diagram of the finished rigid aircraft pavement is reproduced below.

[10] Ian Andrew Ness' 1st AEIC dated 13 July 2017 ("IAN-1") at paras 52–53; Tr/27.09.17/37; LKS-1 at para 16.



7 The bottom most dotted line in the diagram above demarcates what is known as the "formation level". Airports must be built on flat and level ground for reasons of safety and to maximise visibility. Where the existing terrain is undulating, it is necessary to excavate mounds and fill depressions until the ground level is flat and the stipulated formation level is achieved.[11] The soil at formation level is itself compacted to 90% of modified AASHTO density.

8 The "sub-grade" is then constructed, in layers, upon the formation level. The sub-grade consists of four sub-layers, each 250mm thick, for a total thickness of one metre. The bottom most two sub-layers of sub-grade are compacted to a minimum of 95% of modified AASHTO density, and the topmost two sub-layers are compacted to a minimum of 98% of modified

[11] IAN-1 at para 43.

AASHTO density.[12] The upper bound of the sub-grade is known as the "sub-grade level".

9 Above the sub-grade lies the sub-base, which comprises a 300mm layer of graded granite aggregate base. At the ground level, a 350mm-thick concrete pavement lies atop the sub-base.

10 The sequence of works relates closely to the various layers described above. In essence, the works germane to the present dispute can be discussed in terms of four broad stages:

(a) site preparation works;

(b) the earthworks;

(c) sub-grade construction works; and

(d) the sub-base and pavement works.

11 The earthworks were undertaken in respect of the entire project site, but the sub-grade and pavement works were only necessary where aprons or taxiways were to be constructed.[13] Other areas were finished with a layer of turf at the formation level.

12 Before any earthworks can commence, the site must first be cleared of obstacles, such as any undergrowth, shrubs or trees.[14]

---

12 Tr/09.02.18/68/2–9.

13 Tr/13.02.18/116/17–21.

14 Tr/12.09.17/64–65.

13 After the site is cleared, as a preliminary step, the topsoil is separated and stockpiled for later use in the turfing works.[15] This is because topsoil is generally unsuitable for fill works, and usually needed for subsequent re-turfing on the final ground level where grass or landscaping is required.[16]

14 After the topsoil is separated, the earthworks can begin. In gist, the "earthworks" refer to the works required to get from the existing ground level to the formation level. There are two types of earthworks: "cut" works and "fill" works.[17]

15 The cut works occur where the existing ground level lies *above* formation level, the excess earth must be excavated or "cut" until formation level is reached.[18] Soil testing may then be done to determine if the excavated soil is suitable for use in the construction of the sub-grade (*ie*, capable of being compacted to a sufficiently high density).[19] If the material is suitable, it is either transported directly to a fill location for dumping or stockpiled for later use.[20] The parties refer to such material variously as "good soil", "OA soil" and "CAG-approved earth"; for ease of reference I shall refer to such material as "suitable material". Conversely, if the material is found to be unsuitable for use, *eg*, because it cannot be compacted to the requisite densities, it would have to

---

15 IAN-1 at paras 84–85.

16 IAN-1 at paras 61, 85.

17 Tr/09.02.18/66/23–24.

18 IAN-1 at paras 86–88.

19 IAN-1 at paras 53, 89.

20 IAN-1 at para 102.

be transported off-site for disposal. I refer to such material as "unsuitable material".[21]

16 The fill works occur where the existing ground level lies *below* formation level; in such situations, the depression or gully must be filled up to formation level.[22] The soil is then compacted at formation level.[23] If the soil is unsuitable for compaction, a soil exchange might be undertaken by the removal of about half to one metre of the soil below formation level and its replacement with graded stones.[24]

17 The sub-grade is then progressively constructed in layers of 250mm starting at the formation level. For each layer, suitable material is first tipped into a demarcated plot with dimensions of roughly 40m by 10m ("Blocks").[25] Next, the tipped material is spread, levelled and compacted (which I refer to collectively as "the compaction works"). The compaction process requires specialist plant and manpower, and involves spreading the fill evenly in the fill location with a bulldozer, levelling the spread material using a grader, and then compacting the material to the requisite density with various rollers of different sizes.[26]

---

21 IAN-1 at paras 53–54, 102.

22 IAN-1 at para 100.

23 IAN-1 at para 104.

24 Tr/14.02.18/90–92.

25 Tr/14.02.18/59/4–7.

26 IAN-1 at para 91; KSG-1 at paras 36–39; LKS-1 at para 16.

18 Once each layer is complete, CAG's resident engineer would be called to approve the compaction works and certify that it meets the required density before work on the next layer can begin.[27] There was no stipulated period of notice for inspection. Rather, inspections were arranged informally, and by all accounts, most inspections were completed fairly quickly – typically within the same day[28] and some as quickly as within half an hour.[29] In any event, the plant and manpower could be moved to work on the next Block, such that the construction and inspection processes could proceed simultaneously on a rolling basis.[30]

19 Only certain types of earth are suitable for use in the construction of the sub-grade, as the material needs to be capable of achieving relatively high compaction densities.[31] As mentioned above, soil tests would have to be done to determine if the material excavated from the cut areas was suitable for the construction of the sub-grade. In the event of a shortage of suitable material from sources within the site, suitable material would have to be imported from external sources.

20 After the sub-grade is completed, Ley Choon then lays the sub-base, base and premix pavement to reach the final finished level of the work; *viz*, the

---

27 LKS-1 at paras 25–31.

28 Tr/14.02.18/57–59.

29 See 31.AB.20984, Tr/14.02.18/58-59

30 Tr/13.02.18/66–67; Tr/14.02.18/54/3–20.

31 IAN-1 at paras 52–53.

finished surface of the aprons or taxiways.[32] These were not part of Yew San's work under the Agreement.

21 The project site was divided into six phases. Phases 1A, 1B, 2A and 3 involved mostly cut works, whereas Phase 4 involved fill works. Yew San did not have any work in Phase 2B.

The background to the dispute

22 Work started shortly after the parties entered into the Agreement, around April 2010.

23 In the course of the works, it became apparent that most of the excavated material from the on-site cut areas was unsuitable material and had to be disposed of.[33] According to Ley Choon, the rate at which the unsuitable material was being transported off-site for disposal did not keep pace with the rate of excavation, and stockpiles of unsuitable material quickly grew at the project site.

24 Sometime on or about 22 October 2010, CAG wrote to Ley Choon regarding the slow progress of the removal of unsuitable material at Phase 1B. Several site inspections had been conducted, and CAG opined that the reason for the delay was a "lack of resources", though it also noted "a lack of experienced site supervisors who can plan and execute the site works effectively".[34]

---

32 IAN-1 at para 98.

33 LKS-1 at paras 18, 60–70; KSG-1 at para 34.

34 KSG-1 at para 71; 9.AB 5269.

25 On 24 November 2010, Ley Choon expressed its disappointment at Yew San's slow progress in removing unsuitable material from the excavation sites at Phases 1B and 2A and directed Yew San to remove the unsuitable material as soon as possible.[35] On 11 December 2010, Ley Choon wrote to Yew San again, this time putting Yew San on notice that it would mobilise resources to accelerate the progress of Yew San's earthworks and deduct any expenses incurred from the contract price if Yew San failed to improve the pace of earth removal:[36]

> … We have highlighted on numerous occasions to [Yew San] that Phase 1B works, which was due for completion on the 14th November 2010, has been seriously delayed as the present earth profile is still 5 to 6 metres above the proposed level of compacted sub-grade…
>
> [Yew San] has been repeatedly requested to remove the excess earth from site, mainly at phase 1B and abutting phase 3 areas, to facilitate the work progression within phase 1B. However, to our great disappointment, little action has taken place on site.
>
> …
>
> In view of the indifferent mentality of [Yew San] and the already delayed works in Phase 1B, *[Ley Choon] will be mobilizing Machineries and Lorries to aid in the excess earth removal from site starting on 14th December 2010, if [Yew San] show no significant improvement in the excess earth removal from site. Any expenses incurred will be deducted from the Sub Contract Sum Amount.*
>
> [emphasis added]

26 Sometime around May 2011, work had commenced on Phase 3, but the same problems in relation to the disposal of unsuitable material persisted. CAG began monitoring Yew San's truck movements, and, on 23 May 2011, informed

---

35 KSG-1 at para 72; LKS-1 at paras 47–49; 9.AB 5272.

36 KSG-1 at para 74; LKS-1 at paras 51–52; 9.AB 5284.

Ley Choon that the number of truck movements had decreased significantly despite the mounting delays:[37]

> Below is the daily truck movements by your sub-con Yew San at Ph3 site for the past 2 weeks. … *Yew San's truck movements fluctuates daily, and has reduced significantly for the past few days*. Please explain to us the reason and how are you going to catch up on your progress. … [emphasis added]

27 About a week later, on 1 June 2011, CAG wrote to inform Ley Choon that the situation had not improved:[38]

> Please see below for the trips made by Yew San for Ph3's earth removal for the past week. *Not only is there no improvement in the earth removal quantity by your sub-con from last week, there is a decrease in trips for the past few days*. … [emphasis added]

28 On 1 August 2011, Ley Choon began to mobilise its own resources to transport some of the unsuitable material off-site for disposal.[39]

29 On 12 September 2011, a site meeting was convened between representatives from Ley Choon and Yew San to assess the progress of the works at Phases 3 and 4, the minutes of which were attached in an email from Ley Choon to Yew San dated 16 September 2011. Those minutes recorded that as of 7 September 2011, the outstanding quantity of earth to be cut at Phase 3 was 96,847m^3, and the outstanding quantity of earth to be filled at Phase 4 was 12,000m^3 (which Yew San claimed was an underestimate). The parties resolved

---

37 KSG-1 at para 78; 9.AB 5290.

38 KSG-1 at para 79; 9.AB 5292.

39 KSG-1 at para 80.

to work together to hasten progress on the earthworks. In addition, Ley Choon recorded the following in the minutes:[40]

> Should [Yew San] fail to comply, *similar to the situation in Phase 1B* where [Yew San] left the area without excavating to the formation level… [Ley Choon] will step in and engage another party for earth removal, being omission in the original sub-contract. [emphasis added]

30 On 28 September 2011, Yew San responded to Ley Choon's comment in the minutes of the 12 September 2011 meeting. In its response, Yew San did not deny that it had left Phase 1B without excavating to the formation level, but explained that "the work done was as per instruction given by the site manager and [Yew San] is to await for further levelling instruction".[41]

31 There is some uncertainty as to when Yew San ceased work and left the site. Mr Leo Kim San ("Mr Leo"), general manager of Yew San and its sole factual witness, stated that the last truckload of earth was excavated and removed on 18 February 2012.[42] However, under cross-examination, he clarified that Yew San only left the site sometime in the beginning of April 2012.[43] He explained that while the last truckload of earth was excavated and removed on 18 February 2012, there remained other works such as tipping suitable material into specified fill locations for Ley Choon to compact. The last piece of work that Yew San completed at the site was the transfer of earth from Phase 3 to Phase 4 for the fill operations.[44] After this was done sometime in

---

40 KSG-1 at paras 82–84; LKS-1 at para 58; 9.AB 5298.

41 LKS-1 at para 59; 9.AB 5301.

42 LKS-1 at para 44.

43 Tr/20.09.17/91/20–21; 93/6–7.

44 Tr/20.09.17/92/19–25; 93/13–18.

April 2012, Ley Choon's project manager, Mr Yap Kar Way ("Mr Yap"), allowed Yew San to leave.[45]

32 On 3 September 2012, Yew San issued Progress Claim No 9 to Ley Choon, termed "final".[46] Subsequently, Yew San issued three more progress claims, similarly expressed to be "final", the last of which was dated 30 October 2014 (Progress Claim No 12).[47] Ley Choon responded with a payment response dated 13 November 2014.[48]

The parties' cases

The statement of claim

33 Yew San's case is straightforward. It describes the work it had to do, avers that compaction of the sub-grade layers was not part of its work, Ley Choon caused delays to Yew San's work by delays in their compaction of the sub-grade layers and having completed the subcontract works, it is entitled to the balance contract price of $1,321,000.00 outstanding under the Agreement, plus $92,470.00 being 7% goods and services tax ("GST") thereon.[49]

34 While Yew San had, in its Statement of Claim (Amendment No 1) ("Statement of Claim"), initially claimed the sum of $35,759.40 being amounts outstanding for certain transportation services allegedly rendered by Yew San

---

45 Tr/20.09.17/93/8–12.

46 KSG-1 at para 127.

47 KSG-1 at para 127; 1.PB at p 23–35.

48 KSG-1 at para 127; 8.AB 4669.

49 Statement of Claim (Amendment No 1) at para 17.

pursuant to a collateral oral agreement,[50] it has since dropped this claim in its closing submissions.[51]

The defence and counterclaim

35 Ley Choon avers that Yew San did not complete the subcontract works. Ley Choon avers that Yew San's work included:

(a) the compaction of the sub-grade layers;

(b) the stockpiling and protection of suitable material from the cut areas for subsequent use in the fill areas;

(c) if there was insufficient area to stockpile the suitable material, Yew San had to store the same at its own storage space away from the site; and

(d) the removal of unsuitable material from the site and disposal.

Ley Choon's case is that it has paid for all the work that Yew San had carried out. In its Defence and Counterclaim (Amendment No 1) ("Defence and Counterclaim"), Ley Choon initially appeared to take the position that Yew San was not entitled to the balance contract price at all.[52] Subsequently, Ley Choon clarified that it accepts that Yew San is entitled to the balance contract price, subject to deductions reflecting the value of the works left incomplete[53] by way

---

50 Statement of Claim (Amendment No 1) at paras 18–21.

51 Plaintiff's Closing Submissions ("PCS") at paras 3 and 219.

52 Defence and Counterclaim (Amendment No 1) at para 16.

53 Defendant's Closing Submissions ("DCS") at para 744; Defence and Counterclaim (Amendment No 1) at para 17.

of set-off or counterclaim for the costs and expenses incurred by Ley Choon in completing the subcontract work left unfinished.

36 In particular, the following costs and expenses were incurred by Ley Choon in completing Yew San's unfinished works:

(a) costs and expense incurred by Ley Choon in (i) transporting unsuitable material from the project site to off-site locations for disposal; (ii) the use of excavators and manpower for that same task; and (iii) the use of lorries for internal transfers of excavated material within the site as a result of Yew San failing or neglecting to complete the excavation and fill works in Phases 1B, 3 and 4;[54]

(b) costs and expense incurred by Ley Choon in obtaining and transporting suitable material from external sources off-site to the project site;[55] and

(c) costs and expense incurred by Ley Choon in providing the required plant and machinery for the compaction works.[56]

37 Ley Choon further avers that as a result of Yew San's failure or neglect to carry out the subcontract works within the stipulated time, the overall project works were completed late, and that CAG then became entitled to and did impose liquidated damages on Ley Choon, which liquidated damages were

---

54 Defence and Counterclaim (Amendment No 1) at paras 17, 37; read with Further and Better Particulars of the Defence and Counterclaim at para 3.

55 KSG-1 at para 93; Defendant's Reply Submissions ("DRS") at para 175.

56 DCS at para 722; Defence and Counterclaim (Amendment No 1) at paras 19, 44.

attributable to the acts, omissions or breaches (including negligence) of Yew San. Accordingly, Ley Choon counterclaims for:

(a) an indemnity in respect of liquidated damages imposed on Ley Choon by CAG which were attributable to the acts, omissions or breaches of Yew San;[57] and

(b) time-related loss and expense, consequential on the delays caused by Yew San.[58]

38 Apart from the counterclaims in relation to Yew San's unfinished works and the alleged delay, Ley Choon counterclaims for:

(a) the cost of repairing a 6.6kV HT cable ("the HT Cable") damaged by Yew San;[59] and

(b) the cost of purchasing and importing topsoil from external sources for turfing works due to Yew San's failure to stockpile sufficient topsoil excavated from the project site.[60]

The reply and defence to counterclaim

39 Yew San's defence to Ley Choon's counterclaims in respect of the incomplete works comes in two prongs: first, Yew San avers that the supply of sub-grade material and the compaction works were not part of its scope of

---

57 Defence and Counterclaim (Amendment No 1) at paras 22, 41.

58 Defence and Counterclaim (Amendment No 1) at para 42.

59 Defence and Counterclaim (Amendment No 1) at paras 23, 43.

60 Defence and Counterclaim (Amendment No 1) at paras 24, 45.

works,[61] and second, in relation to the cut and fill earthworks which were part of its scope of works, Yew San denies that it had failed or neglected to complete those works.[62]

40 In relation to the counterclaims in respect of the alleged delays caused by Yew San, Yew San denies that it was in delay for the works in Phases 3 and 4, and further avers, in the alternative, that any such delay was caused by Ley Choon.[63]

41 Yew San further denies that it is liable to Ley Choon for the costs of repairing the HT cable and/or the importation of topsoil for the turfing works.[64]

Summary of the claim and counterclaims

42 Yew San's sole remaining claim is for the balance of the contract price, being $1,321,000.00 and $92,470.00 as 7% GST ("the Contract Price Claim"), plus interest and legal costs.[65]

43 Ley Choon's counterclaims are as follows:

(a) counterclaim for the costs and expense incurred in carrying out Yew San's compaction works that were not done by Yew San,

---

61 Reply and Defence to Counterclaim (Amendment No 2) at paras 3, 7, 11–12.

62 Reply and Defence to Counterclaim (Amendment No 2) at paras 6–8, 11.

63 Reply and Defence to Counterclaim (Amendment No 2) at paras 13–14.

64 Reply and Defence to Counterclaim (Amendment No 2) at para 13.

65 Statement of Claim (Amendment No 1) at para 17.

amounting to $412,282.22 ("the Incomplete Compaction Works Counterclaim");[66]

(b) counterclaim for the costs and expense incurred in carrying out Yew San's excavation, disposal and fill works that were left incomplete, amounting to $451,329.58 ("the Incomplete Earthworks Counterclaim");[67]

(c) counterclaim for the cost of supplying suitable material for sub-grade fill works, amounting to at least $258,075.12 ("the Sub-grade Material Counterclaim");[68]

(d) counterclaim for an indemnity in respect of liquidated damages imposed on Ley Choon by CAG which were attributable to the acts, omissions or breaches of Yew San. The exact quantum depends on the number of days for which liquidated damages were imposed found attributable to delays caused by Yew San ("the Indemnity Counterclaim");[69]

(e) counterclaim for time-related loss and expense consequential on the delays caused by Yew San. Again, the exact quantum depends on the number of days of delay ("the Prolongation Costs Counterclaim");[70]

---

66 DCS at para 722; Defence and Counterclaim (Amendment No 1) at paras 19, 44.

67 DCS at para 716; Defence and Counterclaim (Amendment No 1) at paras 17, 37.

68 DCS at para 721.

69 DCS at para 666; Defence and Counterclaim (Amendment No 1) at paras 22, 41.

70 DCS at para 738; Defence and Counterclaim (Amendment No 1) at para 42.

(f) counterclaim for the cost of repairs to the HT Cable damaged by Yew San. Ley Choon claims only nominal damages as they are unable to adduce evidence of the costs of repair ("the HT Cable Counterclaim");[71]

(g) counterclaim for the cost of acquiring topsoil which was supposed to have been stockpiled by Yew San for turfing works. Ley Choon claims only nominal damages ("the Topsoil Counterclaim");[72] and

(h) interest and legal costs.

My decision

The Contract Price Claim

44 Yew San claims the balance of the contract "lump sum" price outstanding from Ley Choon, *viz*, the sum of $1,321,000.00 and $92,470.00 as 7% GST, on the basis that it had completed the works. As noted above, Ley Choon's initial defence was that Yew San was not entitled to the balance because it had not completed its work under the Agreement. In other words, Ley Choon was raising a defence based on a "true" lump sum contract, in the sense of an "entire" contract where the contractor's right to payment depends on his completion of the *whole* works: see Stephen Furst QC and Sir Vivian Ramsey, *Keating on Construction Contracts* (Sweet & Maxwell, 10th Ed, 2016) ("*Keating*") at para 4-004.

---

71 DCS at para 733; Defence and Counterclaim (Amendment No 1) at paras 23, 43.

72 DRS at para 26; Defence and Counterclaim (Amendment No 1) at paras 24, 45.

45 As the learned authors in *Keating* point out, these types of entire contracts can give rise to intractable problems (see *Keating* at para 4-003). For example, where a contract provides for works based on 40 items set out in the contract specifications and only ten items have been completed, can the employer refuse to make payment? What if only 20 of the 40 items were completed? What if all but two items were completed?

46 Whether a lump sum contract is an "entire" contract will be a matter of construction of all the contractual documents, terms and conditions. It also depends on the facts and circumstances of the case in question. In today's context, true lump sum contracts, in the sense of entire contracts where there is no obligation to make any payment unless and until every single one of the obligations undertaken has been completed, are relatively uncommon, see *Keating* at para 4-005. In most cases there will be an obligation to make periodic payments.

47 In the present case, the Agreement is not a lump sum contract in the nature of an "entire" contract. There is little indicia pointing to an entire contract. The Agreement is a subcontract of part of the works within a larger main contract with a much larger scope of works. It involves subcontracted works which interfaces with the Main Contract. On the other hand, there is a right to monthly progress payments based on that part of the work "[s]cope" satisfactorily done in the preceding month, with quantities of earthworks (cut and fill) to be mutually agreed and subject to certified valuation by CAG or its consultants: see cl 2.2. There is a similar right to progress payments upstream. This is an indicator that the Agreement is not an "entire" lump sum contract: see *Keating* at para 4-007. Hence, to the extent that Ley Choon refuses to pay

Yew San any sum on the basis that the Agreement is an entire contract, that position is untenable and must be rejected.

48 By the time it came to its written submissions, Ley Choon accepted that Yew San is entitled to the balance sum, albeit a *reduced* sum reflecting the value of the work left incomplete, calculated by reference to the amounts expended by Ley Choon in completing Yew San's outstanding works (see [36] above).[73] This concession was, in my view, rightly made.

49 However, in a summary of its request for findings, Ley Choon lists the costs incurred in completing the unfinished works *both* as an amount to be set off against Yew San's Contract Price Claim *and* as a standalone counterclaim.[74] In principle, in a contract of this nature, Ley Choon can claim an abatement of the contract price payable to Yew San for that portion of its work that was left undone and if the facts warrant it, damages for the increased costs (above the contracted rates and prices) to complete the incomplete work. Ley Choon has to show what work was completed and what work was not completed and based on the contract sum and the envisaged volumes of cut and fill earth, or some other measure upon which the parties reached the lump sum of $2,280,000.00, reduce the price to be paid accordingly (*eg*, there is some evidence in a Yew San quotation dated 26 January 2010 that Ley Choon gave the quantities for cut and backfill at 175,803 m^3 and cut and disposal at 328,075 m^3).[75] If, (I stress) for example, Ley Choon can prove that Yew San only completed 50% of its work at the time it left the site, then putting all other matters to one side for the

---

73 DCS at paras 743–744; DRS at para 521(1); IAN-1 at paras 215, 217.

74 DRS at paras 521(1), 521(8).

75 LKS-1 at para 20, "Exhibit B".

purposes of illustration, Ley Choon has to pay Yew San half of the contract lump sum ($2,280,000.00), *ie*, $1,140,000.00 as Yew San has completed that amount of work and is entitled to payment under cl 2. If Ley Choon has only paid the sum of $959,000.00, then an amount of $181,000.00 for work done remains outstanding to Yew San, subject of course to any cross-claims or set-offs. If Ley Choon can prove that it paid third parties $1,500,000.00 to complete the works left incomplete by Yew San, then Ley Choon would have a counterclaim of $360,000.00 to complete the unfinished works under the Agreement. If market conditions were such that the cost to Ley Choon to complete the works was less than $1,140,000.00, then it has suffered no loss in that respect and still has to pay the balance of $181,000.00 to Yew San (subject to any other cross claims of set-offs).

50 Instead, Ley Choon now accepts that Yew San is entitled to the balance of the lump sum but subject to Ley Choon's entitlement to set-off and counterclaim those sums it incurred in completing the incomplete works as well as other damages that flow from Yew San's breaches of the Agreement. Although it does not matter, I assume Ley Choon adopted this stand as there is no direct or reliable evidence (*eg*, measurement) of the works completed by Yew San and what remained outstanding at the time Yew San left the site. Yew San and Ley Choon have not put forward any unit rates upon which the work that allegedly remained uncompleted (assuming it was available) could be quantified under the Agreement and comparable unit rates to calculate the costs incurred by Ley Choon to complete those uncompleted works. Ley Choon therefore adopts the pragmatic approach of crediting Yew San with the full balance and counterclaims that it incurred in completing the works. I therefore start the accounting aspect, as accepted by Ley Choon, of a sum of $1,413,470.00 in Yew San's favour.

51 I turn now to Ley Choon's counterclaims.

The Incomplete Compaction Works Counterclaim

52 Ley Choon counterclaims for the costs and expenses incurred in undertaking the compaction works, which it says was Yew San's responsibility. Yew San admits that it never carried out any of the compaction works, but argues that this was not part of its work under the Agreement.

53 Yew San submits that Ley Choon had admitted (at para 9(d) of its Defence and Counterclaim) that the compaction works were Ley Choon's work.[76] However, para 9(d) only states that Ley Choon did *in fact* perform the compaction works; it contains no admission by Ley Choon of its *obligation* to perform those works. Moreover, Yew San's conduct of the proceedings gives no suggestion that it had, at any time, been led to believe otherwise; the compaction issue was described by Yew San as "[t]he central dispute" in its Lead Counsel's Statement,[77] and Ley Choon's witnesses were extensively cross-examined on the matter. I therefore find that there is no substance to this submission by Yew San.

54 Yew San's case on the compaction issue has two prongs:

(a) On a proper construction of the Agreement, the compaction works (*ie*, the task of spreading, levelling and compaction) were not part of Yew San's scope of works and services under Appendix A of the Agreement; and

---

76 PCS at para 34; Plaintiff's Reply Submissions ("PRS") at para 19.

77 Plaintiff's Lead Counsel Statement at para 10.

(b) Even if Yew San was contractually obliged to perform the compaction works under the Agreement, Ley Choon is nonetheless estopped from insisting that Yew San do so.

Interpretation of the Agreement

55 I find that on a proper construction of the Agreement the compaction works do not fall within the scope of Yew San's works and services. My reasons are as follows.

56 It is common ground that the Agreement is contained in a 28-page document.[78] There is an entire agreement clause. It is important to note that parts of the Agreement were specially drafted and parts (*eg*, Appendices D1 to D4 and drawings) were lifted from the Main Contract. In this case, those specially drafted portions are therefore of greater significance and weight than those taken from the Main Contract. Further, having heard the evidence of the witnesses, these parties are, with respect, not the most sophisticated contractors in the industry and the language used in the Agreement bears this out.

57 The scope of Yew San's works and services under the Agreement is first referred to in the second recital:

> [Ley Choon] has accepted the engagement of [Yew San] to perform the works and services *based on* the *scope of works and services defined in Appendix A* of this Agreement *and specifications of the Main Contract* (hereafter referred to as "**Scope**") in accordance with obligations of [Ley Choon] under the Main Contract. [emphasis in italics, emphasis in bold in original]

---

78 1.AB 1–28

In Appendix A of the Agreement, cll (iv) and (v) are of particular relevance to the compaction issue:

> **Appendix A**
>
> **Scope of Works and Services**
>
> …
>
> (iv) For Cut Area, *supply, deliver and fill* CAG-approved earth/soil from [Yew San's] own sources or earth/soil excavated within the site, in layers of 250mm each and up to total thickness of 1 metre (Appendix H), for the construction of subgrade.
>
> …
>
> (v) For Fill Area, *supply, deliver and fill* CAG-approved earth/soil from [Yew San's] own sources or earth/soil excavated from within the site, in layers of 250mm each, up to the specified subgrade level (Appendix G).
>
> …
>
> [emphasis added]

The central issue is the proper interpretation of the phrase "supply, deliver and fill". Yew San's position is that "fill" entails only the task of dumping or tipping the suitable material into the area to be filled, whereas Ley Choon contends that the obligation to "fill" must necessarily include spreading, levelling *and compaction* of the suitable material after it is dumped.

(1) The plain text of Appendix A

58 It is obvious from the plain text of the Agreement that the work is described as "supply, deliver and fill" and the word "compact" or "compaction" is not there. In the context of earthworks, the type of works comprised in compaction, as compared to "fill", are completely different in nature and extent. Fill works can be carried out with dumper trucks bringing suitable fill material to site and dumping them in stockpiles. Compaction works are on a markedly

higher order of complexity, and require specialised equipment, machines and labour such as bulldozers, graders, vibrators and rollers of various sizes.[79] In this project, the construction of the sub-grade had to be carried out in layers of 250mm, *viz*, a *compacted* layer with a specified percentage of density to AASHTO standards had to be constructed before the next layer could be laid. Had the parties intended for Yew San to undertake compaction works, one would have expected that the parties would have inserted a clear, express word or provision to that effect. Further, leaving out "compaction" to a particular standard, like AASHTO, makes no sense in the context of a contract for earthworks within an airport where the critical works envisaged included aircraft parking aprons and taxiways. Both these items were clearly not written into the scope of works for Yew San in Appendix A.[80] This omission becomes more stark, as will be seen later, when one looks at the Main Contract specifications which call for "compaction" and to a particular standard as well.

59 Ley Choon raises three points in reply. First, it argues that the words "supply" and "deliver" would have been sufficient if all that Yew San had to do was to dump the suitable material, and that the additional reference to the obligation to "fill" must therefore mean more than simply to dump the material.[81] The sufficiency of two words instead of three being used is not at all a convincing reason to construe the three words to necessarily include a fourth, "compaction", *a fortiori* where "fill" and "compaction" refer, in the context of this contract, to very different construction obligations. In my view, the

---

79 PCS at paras 39, 46–52.

80 PCS at para 53.

81 DCS at para 135.

reference to an obligation to "fill" specifies that Yew San's obligations did not end upon delivery of the suitable material to stockpiles at the project site. Rather, Yew San was also to dump the suitable material into specific fill locations as required. The areas to which these works were to be carried out were very large; it is within a sizeable airport and this is clearly shown in the photographs. As noted above, the evidence was that these layers were constructed in rectangular Blocks of some 40m by 10m at a time. Yew San therefore had to create smaller stockpiles for each block, whereupon the bulldozers would get to work levelling the fill into a suitably thick layer and then for the rollers to then carry out the compaction.

60 Secondly, Ley Choon says that the requirement to fill "in layers of 250mm" would be impossible to meet unless Yew San also spread, levelled and compacted the suitable material.[82] In my view, the reference to "layers of 250mm" serves only to specify that Yew San was to dump the suitable material in separate areas corresponding to each 250mm layer. Specifying that the fill was to be done in layers of 250mm cannot, by itself, create an obligation to also spread, level and compact the suitable material. As set out in the foregoing paragraph, the construction sequence was not just dumping the soil in stockpiles and Yew San's job was done. The contract called for Yew San to carry out shifting and movement of stockpiles and then to create smaller stockpiles of earth to enable each layer to be constructed in sequential rectangular blocks of a smaller size. I accept Yew San's submission that until Ley Choon completed their compaction of a layer, Yew San could not proceed to dump suitable fill for

---

82 DCS at paras 132–133.

construction of the next layer. However, whether they have made good their allegation that Ley Choon delayed in the compaction work is another matter.

61 Lastly, Ley Choon argues that the word "fill" is a term of art in the construction industry. Ley Choon refers to the evidence of its earthworks expert, Mr Ian Ness ("Mr Ness"), that a requirement to "fill" would encompass compaction.[83] I make three points on his opinion:

(a) Mr Ness' opinion was based on his *general* observations of such contracts in his experience, but was otherwise unsubstantiated. While I found Mr Ness' testimony in the course of the trial to be generally reliable and helpful, his opinion on this issue, unfortunately, did not go beyond a bare assertion that it was "obvious" to him that compaction formed part of the fill works, and of his unsubstantiated belief that "any reasonably experienced earthworks contractor would conclude the same". In any case, with respect, each contract must first turn upon its terms and where appropriate, its context. In my view, for the reasons I have set out in this judgment, this contract did not provide for Yew San to do the compaction works.

(b) In coming to his view, Mr Ness also relied on the arguments canvassed at [59] and [60] above, which I have already dealt with.

(c) In any case, I note (and Ley Choon quite rightly accepts) that the interpretation of the terms of the Agreement is ultimately a question of law for the Court's determination.[84]

---

83 DCS at para 159; IAN-1 at paras 122, 125.

84 DCS at para 159.

(2) The Main Contract Specifications

62 In support of its contended construction, Ley Choon further refers to cll 6.1.1 and 6.4.2 of the enclosed Specifications in the Main Contract between CAG and Ley Choon ("the Specifications"), which Ley Choon submits is part of the Agreement and contains works that Yew San had to carry out. As noted above, these provisions are lifted from the Main Contract specifications of Ley Choon's work *vis-à-vis* CAG:[85]

> 6.1 GENERAL
>
> 6.1.1 Scope
>
> Include excavation, disposal of unwanted material off site to Contractor own dumping ground, transportation of earth material from approved source, filling, *compaction in layers*, forming, grading and trimming all slopes and embankments to formation level including filling and reinstating depression after site clearance, all as shown in the Drawings or as specified herein.
>
> …
>
> 6.4 FILLING WORKS
>
> 6.4.1 For Completed Structures
>
> All back-filling of trenches, pits, depressions, structural foundations etc. shall be carried out in layers not exceeding 225 mm in thickness and the filling shall be of material approved by the S.O. or of material specified in the Drawings or Specifications.
>
> …
>
> 6.4.2 For Pavement
>
> Filling for building-up of foundation for pavement shall be carried out in layers not exceeding 250 mm in thickness *and the fill shall be compacted by vibratory rollers or other approved compacting plant to achieve a compaction requirements specified for the subgrade preparation works*.

---

85 DCS at para 139.

> …
>
> [emphasis added]

63 Clause (xi) of Appendix A makes the Specifications applicable to Yew San's work under the Agreement. It reads:[86]

> Notwithstanding of the above, *[Yew San] shall undertake to comply fully with all relevant Specifications*, Particular Requirements, the Drawings, Standard and Particulars Conditions and the Appendix of the main Contract. A copy of each of the above is available for [Yew San's] inspection… [emphasis added]

According to Ley Choon, the compaction works are Yew San's work, because cl (xi) of Appendix A requires Yew San to comply with cll 6.1.1 and 6.4.2, both of which expressly provide for the requirement of compaction of the fill material.

64 In my view, the references to the compaction works in cll 6.1.1, 6.4.1 and 6.4.2 of the Specifications do not assist Ley Choon. In fact they work against Ley Choon's interpretation. As noted above, the words used in cll (iv) and (v) in Appendix A are simply "to supply, deliver and fill … in layers of 250mm each" without the word "compaction". As emphasised in italics in the Specifications set out above, at cl 6.1.1, after the word "filling" there is an additional phrase "compaction in layers" and in cl 6.4.2 it is specifically provided that "the fill shall be compacted by vibratory rollers or other approved compacting plant to achieve a compaction requirements specified". If indeed Ley Choon, which drafted the contract, wanted to include compaction in the Agreement, it would have been quite a simple matter to mirror these requirements by including these words and similar phrases in Appendix A.

---

86 DRS at paras 31, 100.

Instead, they were not included, or more correctly in my view, omitted in not one but two clauses in Appendix A. Further, for filling works, cl 6.4 refers to compaction to specified AASHTO standards as part of the contracted work as far as Ley Choon and CAG are concerned. That specified standard for compaction is not set out in Appendix A. If compaction was indeed meant to be part of Yew San's work, then Ley Choon has not explained why compaction to percentages of this specified standard are not also in Appendix A. Compliance with these specified standards of compaction are strict and cl 6.4.4 of the Specifications provides for field density tests, in accordance with BS 1377, for each layer of the compacted fill in the presence of CAG's Superintending Officer's representative. The fact that these appendices, and the drawings, are also included as part of the Agreement does not automatically mean that whatever are in the appendices or drawings from the Main Contract are also part of Yew San's work under the Agreement.

65 The Specifications and drawings are part of the Main Contract between *CAG and Ley Choon*. The Specifications (as part of an agreement between CAG as employer and Ley Choon as contractor) were concerned only with *what* was to be done, not *who, as between Ley Choon and Yew San,* was to do it. For that reason, there are limitations to their relevance to the interpretation of Appendix A of the Agreement, which governs the allocation of work between Ley Choon as main contractor and Yew San as subcontractor. Clause (xi) of Appendix A only means that Yew San must perform its works to the specifications set out in the enclosed Specifications, *where that work is within its scope work*. It cannot be read to mean that Yew San is responsible for all the works described in the Specifications. This is made clear by the reference in cl (xi) of Appendix A to the "*relevant* Specifications" [emphasis added]; Yew San need only comply with the Specifications which were relevant to its scope

of work under the Agreement, not the Specifications in their entirety. It will be readily seen that some of the works listed in the enclosed Specifications clearly fall outside Yew San's scope of works or are otherwise inapplicable to the Agreement (*eg*, shoring works with timber or sheet piles, services of a Professional Engineer for excavations beyond 4m depths, the time periods in cl 5, the construction of new security fences to separate airside operational areas from the construction site, the construction of concrete lined perimeter drains, construction of silt fences and traps, the sub-base works, aircraft tie down hooks and the obligations in sections 6.4.3.3 and 6.4.3.4 to test the fill material for suitability).[87]

66 The express references to the compaction works in the Specifications therefore do not assist Ley Choon's case and do not make compaction works part of Yew San's works under the Agreement. I therefore find that the compaction works did not form part of Yew San's scope of works.

(3) The parties' subsequent conduct

67 I turn now to an argument raised by Yew San in support of its construction: that the parties' subsequent conduct throughout the duration of the works confirms that compaction was not intended as part of Yew San's scope of works.

68 Yew San submits that throughout the almost two-year duration of the works, the parties conducted themselves on the basis that Yew San need not undertake any compaction works. It is undisputed that Yew San never did any

87 Tr/27.09.17/58/15–16.

spreading, levelling or compaction works; in fact, at no point did Yew San ever bring the specialised manpower and machinery needed to undertake such works to the project site.[88] If the compaction works were Yew San's obligation, one would have expected Ley Choon to have remonstrated with Yew San at the earliest opportunity or at least at some time during the course of Yew San's work. Yet, nothing in the record indicates that Ley Choon had made any complaint to Yew San on this score. On the evidence before me, it is clear that for the entire duration of the project, Ley Choon supplied the requisite machinery and manpower and undertook the compaction works – without protest. Mr Koh Soo Ghim ("Mr Koh"), Ley Choon's project manager for the Seletar Airport Project, admitted under cross-examination that Ley Choon never asked Yew San to carry out the compaction works, much less issue a written complaint regarding the compaction works:[89]

> Q: When you joined the project in October 2010, would you agree with me that Ley Choon never asked Yew San to carry out compaction works in this project?
>
> A: I wasn't liaising with Yew San but, to my knowledge, I don't think we got ask Yew San to carry out compaction.
>
> Q: Would you agree with me that throughout the project, Ley Choon never specifically demanded in writing that Yew San carry out compaction works?
>
> A: Yes.

69 Ley Choon's only response in relation to this important exchange was that it does not foreclose the possibility that there might have been oral complaints.[90] With respect, I found that submission to be purely speculative. If

---

88 KSG-1 at paras 40–42

89 Tr/26.09.17/63–64.

90 DRS at paras 124–125.

there had indeed been any oral complaints made, Ley Choon could easily have called a witness to depose to that fact. Quite tellingly, no such evidence was placed before me. In any event, the compaction works comprised a substantial portion of the works, and it certainly would not have been unreasonable to expect that Ley Choon would have lodged repeated written complaints with Yew San (as was in fact done in relation to Yew San's failure to remove and dispose of unsuitable material) if indeed the parties had intended that Yew San undertake the compaction works.

70 I note that subsequent conduct is not an orthodox tool in the interpretation of contracts, see *Zurich Insurance (Singapore) Pte Ltd v B-Gold Interior Design & Construction Pte Ltd* [2008] 3 SLR(R) 1029 at [132(d)] and *Sembcorp Marine Ltd v PPL Holdings Pte Ltd and another and another appeal* [2013] 4 SLR 193 ("*Sembcorp Marine*") at [36]. I accept that courts ought to exercise especial caution when dealing with evidence of subsequent conduct, however this does not mean that subsequent conduct of the parties should always be disregarded. In *Ngee Ann Development Pte Ltd v Takashimaya Singapore Ltd* [2017] 2 SLR 627, the Court of Appeal referred to the parties' subsequent conduct to determine the parties' agreement on the meaning of a term of a lease. In that case, the question was whether the "prevailing market rental value of the [premises]" in a rent review clause was to be assessed on the basis of the existing configuration of the premises or on a hypothetical configuration reflecting the highest and best use of the premises. In coming to its decision that the existing configuration should apply, the Court of Appeal referred to the parties' conduct in the prior two rent reviews as cogent evidence that the application of the existing configuration was entirely in line with the parties' agreement. The conduct in question was Ngee Ann Development's omission to raise any objections to the assessor's prior applications of the

existing configuration for the purposes of valuation over the past 20 years since the lease commenced. Pertinently, the Court of Appeal observed that "Ngee Ann Development's silence" was "in itself a clear endorsement of Takashimaya's position [that the existing configuration should apply]" (at [103]).

71 In a similar vein, Ley Choon's silence over such a substantial item of work in the two years when the works were in progress constitutes cogent evidence of its view of contractual obligations which coincide with Yew San's position that compaction was not part of its works. This, coupled with the fact that the compaction works were undertaken by Ley Choon at all material times without any protest or reservation of rights, is again confirmation that the parties never intended for Yew San to undertake the compaction works. The usual difficulty with parties' subsequent conduct, *viz*, that the facts and circumstances often point both ways and parties then seek to cherry-pick those aspects of subsequent conduct that bolster their respective cases, does not arise here because Ley Choon could not and did not point to a single aspect of the parties' conduct that suggested that the parties intended that compaction form part of Yew San's scope of works.

72 I therefore find this aspect of the evidence relevant, not as an aid to interpretation of the Agreement, but as confirmation of the conclusion I have already reached in construing the Agreement on its terms. The evidence of the parties' subsequent conduct is relevant, reasonably available to both parties and relates to a clear and obvious context.

73 I also note the requirement of basic civil procedure set out in *Sembcorp Marine* that parties are required to, *inter alia*, plead with specificity each fact they wish to rely on in support of their construction of the contract, and to

specify the effect which those facts will have on their contended construction (*Sembcorp Marine* at [73]). The *Sembcorp Marine* requirements of civil procedure serve the important purpose of preventing the courts from being flooded by a "tsunami of evidence" in cases where the parties may otherwise have been inclined to indiscriminately admit extrinsic evidence in the hope that at least some of it would be relevant and of assistance to their respective cases (*Sembcorp Marine* at [66]). Whilst this point of pleading may offend the letter of *Sembcorp Marine*, it does not offend the spirit of *Sembcorp Marine* in the receipt of cogent evidence because Yew San seeks not to inundate the court with records of the parties' conduct during the progress of the works; on the contrary, it simply wishes to point to the paucity of evidence that any complaint, protest or demand was made in relation to Yew San's non-performance of the compaction works.

74 Whilst neither party has pleaded any particular factual matrix as being relevant to the construction of the Agreement,[91] it is pertinent that the facts on which Yew San now relies (*ie*, the facts relating to the parties' conduct of the compaction works) were referred to in para 12 of the Reply and Defence to Counterclaim (Amendment No 2), albeit in the context of Yew San's pleadings on estoppel. I note also that Mr Leo did state that there was "no allegation" that Yew San was to carry out the compaction works, noting that the only complaints were about the slow progress of the works in relation to the disposal of unsuitable material.[92] The same point was made in Yew San's Opening Statement (at para 46), and, as mentioned at [68] above, Ley Choon's Mr Koh

---

91 DCS at para 114.

92 LKS-1 at para 53, heading above para 47.

was cross-examined on whether Ley Choon had made any complaints to Yew San regarding its non-performance of the compaction works. Quite tellingly, Mr Koh was not re-examined on this point. In light of the foregoing, I do not think it can be said that Ley Choon was in any sense caught by surprise by Yew San's reliance on the parties' post-contractual conduct for the purpose of contractual interpretation.

75 Finally, I also refer to another piece of confirmatory evidence. In his affidavit of evidence-in-chief ("AEIC"), Mr Leo deposes that compaction was clearly not part of Yew San's scope of works because when he quoted for the job, his price did not include compaction. Mr Leo exhibits his quotation dated 26 January 2010. That quotation for $4,700,000.00 clearly did not include compaction. It showed a lump sum quotation based on Ley Choon's quantities of 175,803 m^3 of cut and backfill and 328,075 m^3 of cut and disposal, of $4,650,000.00 and a lump sum for site clearance at $50,000.00. These same quantities of cut and backfill and cut and disposal are used in all of Yew San's progress claims. In addition to the lumpsum quotation for cut, backfill and disposal, the quotation also included unit rates for additional items of work, *viz*, earth trimming, levelling and compacting at $12.00 per m^3, disposal of unsuitable material off site at $12.00 per m^3 and construction of temporary C7 drains and sump pit within the site. As noted above, the eventual contract sum was $2,280,000.00.

(4) Conclusion

76 For the reasons given above, I find that the compaction works did not form part of Yew San's obligation to "supply, deliver and fill" under cll (iv) and (v) of Appendix A of the Agreement.

Estoppel

77 Given my finding that the compaction works were not part of Yew San's scope of works, it is strictly speaking unnecessary for me to consider whether Ley Choon is estopped from denying the same. However, for completeness, I make my findings and give my views on the parties' submissions.

78 I note that Yew San's Reply and Defence to Counterclaim (Amendment No 2) was amended on 8 August 2017 to introduce Yew San's pleadings on estoppel. After the close of the proceedings, Yew San made no submissions on estoppel in its written closing submissions. It was only in response to Ley Choon's written closing submissions that Yew San made submissions on estoppel.[93] In its written reply submissions, Yew San proceeded on the basis that promissory estoppel was the applicable species of estoppel, and the parties only joined issue on whether the elements of promissory estoppel were made out on the facts.[94]

79 The legal elements that must be proved to raise promissory estoppel are trite and are not disputed: (1) There must be a clear and unequivocal representation made by the promisor to the promisee, (2) reliance on that representation by the promisee and (3) detriment suffered by the promisee in reliance on the representation (*Aero-Gate Pte Ltd v Engen Marine Engineering Pte Ltd* [2013] 4 SLR 409 at [37]).

---

93 PRS at para 36.

94 PRS at paras 36–39.

80 According to Yew San, Ley Choon's conduct throughout the course of the project – *viz*, its acquiescence in Yew San's non-performance of the compaction works – constituted an unequivocal representation that Ley Choon would not insist on its strict legal right under the Agreement to have Yew San undertake the compaction works, which Yew San relied on in its non-performance of the compaction works. On this basis, it would be inequitable to allow Ley Choon to resile from that representation and sue Yew San for failure to perform the very obligations Ley Choon had promised it would not enforce.[95]

81 Ley Choon submits that Yew San did not rely on any purported representation made by Ley Choon; if anything, Yew San relied entirely on its own mistaken belief that it was not obliged under the Agreement to undertake the compaction works in not performing the same.[96] I agree.

82 It is difficult to see how Yew San could have understood Ley Choon's post-contractual conduct as a representation that it would not enforce its legal right under the Agreement to have the compaction works performed by Yew San given that Yew San had, at all material times, believed that Ley Choon had no such legal right.[97] The same point was made by Tuckey LJ in *HIH Casualty and General Insurance Ltd v Axa Corporate Solutions* [2003] Lloyd's Rep IR 1, which was cited and discussed in Piers Feltham, Daniel Hochberg and Tom Leech, *Spencer Bower: The Law Relating to Estoppel by Representation* (LexisNexis UK, 4th Ed, 2004) at para XIV.2.21:

---

95 PRS at paras 38–39.

96 DCS at paras 201–207.

97 Statement of Claim (Amendment No 1) at para 9(c); Reply and Defence to Counterclaim (Amendment No 2) at para 7; LKS-1 at paras 14–16, 20; Tr/20.09.17/8–9.

> Unless the representation carries with it some apparent awareness of rights it goes nowhere … A representor who is unaware that he has rights is unlikely to make a representation that carries with it some apparent awareness that he has rights. *Conversely, a representee who is not aware that the representor has a particular right is unlikely to understand the representation to mean that the representor is not going to insist on that right or abandon any rights he may have unless he expressly says so.* It follows, I think, that knowledge, or rather lack of it in this case, is important when one comes to consider whether the estoppel has been established. [emphasis added]

83 Mr Leo's evidence is that he never believed that Ley Choon had a right to require Yew San to carry out the compaction works; I am therefore unable to find that Yew San relied on a promise by Ley Choon not to enforce a right which Yew San itself never believed existed. Accordingly, had I found that the compaction works were Yew San's works under the Agreement, I would not have held Ley Choon estopped from enforcing those rights.

84 I pause to observe that this difficulty may not have presented itself had Yew San relied on the principle of estoppel by convention. Estoppel by convention is based on the adoption of an assumption as the agreed basis of a relationship – here, the common assumption that Yew San was not contractually obliged to undertake the compaction works – and the relevant belief is that the convention has been adopted (see K R Handley, *Estoppel by Conduct and Election* (Sweet & Maxwell, 2nd Ed, 2016) at para 5-009). However, since the parties made no submissions on estoppel by convention, I say no more in relation to it.

Conclusion

85 To summarise, I find that the compaction works were not part of Yew San's scope of works under the Agreement, and accordingly dismiss the Incomplete Compaction Works Counterclaim.

The Incomplete Earthworks Counterclaim

86 Ley Choon submits that it is entitled to charge Yew San for sums incurred to undertake the earthworks – work that was clearly within the scope of Yew San's work under the Agreement. The expenses which Ley Choon claims are: (i) transportation costs for the disposal of unsuitable material off-site; (ii) transportation costs for delivery of suitable material for the fill works from off-site sources to the project site; (iii) transportation costs for internal movement of earthworks material; and (iv) costs of operating excavators deployed on-site to perform excavation works at Phase 3.[98]

87 Yew San submits that Ley Choon's claim (ii) above was not pleaded in its Defence and Counterclaim.[99] I agree. In my view, the reference to "the required resources to fully carry out the backfill operations" in para 19 of the Defence and Counterclaim cannot be read as encompassing the cost of delivery of the fill material; the "resources" particularised in para 19 clearly relate to the plant required for the compaction works, and not the fill material. Accordingly, Ley Choon is not entitled to any relief in respect of the transportation costs for delivery of suitable material for the fill works from off-site sources to the project site.

88 According to Ley Choon, it was forced to step in because (i) Yew San's works were in serious delay, and there had been no improvement in the pace of

---

98 KSG-1 at para 93.

99 PCS at paras 9, 83.

works even after repeated warnings were issued[100] and (ii) the earthworks in some phases were simply left incomplete when Yew San left the project site.[101]

(a) As early as 22 October 2010, CAG had informed Ley Choon that the removal of unsuitable material was proceeding too slowly, and that this was due to, *inter alia*, a lack of resources. Multiple warnings were then issued by Ley Choon to Yew San from November to December 2010, putting it on notice that Ley Choon would "mobilise machinery" to complete the work if it failed to meet the stipulated deadlines (see [25] above). There was no evidence that Yew San ever responded to these letters to deny the allegations of delay or challenge Ley Choon's right to intervene.

(b) In June 2011, Ley Choon came under increasing pressure from CAG to step up the pace of the removal of unsuitable material. By this time, it appears that CAG had taken the view that the cause of the delays was a lack of trucks supplied by Yew San; CAG had itself recorded the number of lorry trips made by daily by Yew San, and observed that there had been a decrease in the number of trip despite CAG's repeated demands that the rate of progress be increased (see [26]–[27] above).

(c) At a site meeting held on 12 September 2011, Ley Choon issued yet another warning, and asserted that Ley Choon had, in relation to Yew San's works in Phase 1B, engaged another party to assist in the disposal of unsuitable material. Importantly, Yew San did not deny that it had left

---

100 KSG-1 at para 80.

101 DCS at paras 696–697.

excavation works unfinished at Phase 1B, nor that Ley Choon had therefore stepped in and engaged an external contractor to complete the works. Instead, Yew San simply said that an unnamed site manager had given it instructions to "await for further levelling instruction" (see [29]–[30] above).

89 I turn now to Yew San's submissions, which, with respect, I found rather difficult to follow. In its written closing submissions, Yew San appears not to deny that Ley Choon had in fact mobilised resources to complete the work that it had left incomplete, nor does it challenge generally Ley Choon's entitlement to charge for those costs. I therefore do not consider a possible defence that in the absence of an express provision, Ley Choon did not have the right to take over Yew San's work and deduct the costs from the contract price, see *Keating* at para 4-055. In any case, the facts surrounding such a defence were not explored nor was the effect of cl 8.1 (the obligation on Yew San to "respond and/or take action within 24 hours [of] any Site Instructions received" and what was to happen if Yew San failed to do so) of the Agreement. Instead, Yew San submits that the claims relating to incomplete work must be confined to Phases 1B, 3 and 4 on Ley Choon's pleaded case.[102] It then goes on to argue that Ley Choon's counterclaim is not made out in relation to the work in Phases 1B, 3 and 4 for various reasons:

(a) Phase 1B: The expenses claimed were incurred between October 2011 and July 2012; since the work at Phase 1B was completed by

---

102 PCS at paras 6–9, 83.

30 June 2011, those expenses clearly do not pertain to any alleged work done at Phase 1B;[103]

(b) Phase 3: Yew San had substantially completed its works at Phase 3;[104] and

(c) Phase 4: Since Phase 4 did not involve any excavation works, Ley Choon's claim for excavation, transportation and disposal of earth cannot concern Phase 4.[105]

90 I deal first with the preliminary point on the pleadings. Yew San argues that the Incomplete Earthworks Counterclaim should be confined to the incomplete works in Phases 1B, 3 and 4. In response to Yew San's request for further and better particulars on the works that Ley Choon says Yew San failed to complete, Ley Choon clearly confined its claim to Phases 1B, 3 and 4:[106]

> **Request**
>
> a. Please state, giving full particulars, as to what works it is alleged [Yew San] failed or neglected to complete.
>
> **Answer:**
>
> a. [Yew San] had failed to and/or neglected to complete its works at Phase 1B, 3 and 4 of the works.

I therefore hold that Ley Choon is entitled, if at all, to relief in respect of incomplete works in Phases 1B, 3 and 4 only.

---

103 PCS at para 90.

104 PCS at paras 85–86.

105 PCS at para 84.

106 Defence and Counterclaim (Amendment No 1) at para 16; Further and Better Particulars of the Defence and Counterclaim at para 3(a).

Phase 1B

91 On the basis that the Incomplete Earthworks Counterclaim is confined to the works at Phases 1B, 3 and 4, Yew San's approach appears to be to show that Ley Choon's claim does not relate to any of those works.

92 Yew San argues that the expenses claimed by Yew San, which were incurred between October 2011 and July 2012,[107] cannot possibly pertain to work done at Phase 1B since the work at Phase 1B, on Ley Choon's own case, had been completed by 30 June 2011 (the date accepted by Ley Choon's expert witness, Mr Ness).[108]

93 With respect, I found that analysis to be overly simplistic. The "date of completion" – 30 June 2011 – had only been accepted by Mr Ness for the purposes of *the delay analysis*; it did not mean that there was absolutely nothing left to do at Phase 1B.[109] In this regard, Mr Ness had specifically pointed out that the work of disposing of unsuitable material continued beyond 30 June 2011, notwithstanding that he had accepted that date as the date of completion of the works at Phase 1B.[110] In fact, disposal works were still ongoing even after the works at Phase 1B were certified substantially complete on 14 February 2012.[111] Mr Ness surmised that the disposal works may not have interfered with

---

107 KSG-1 at para 96.

108 PCS at para 90; IAN-1 at p 250, para 53.

109 IAN-1 at p 250, para 53; KSG-1 at para 124.

110 IAN-1 at p 249, para 50; KSG-1 at para 29.

111 IAN-1 at pp 197, 199–200.

substantial completion if the stockpiles were at the boundary of the phase, and this suggestion went unchallenged in cross-examination.[112]

94 On the evidence before me, it is clear and I find that the disposal of unsuitable material excavated from Phase 1B continued well past 30 June 2011, and that some of these works were undertaken by Ley Choon and/or its appointed subcontractors. Since disposal of unsuitable material was Yew San's obligation, Ley Choon is entitled to claim in respect of that work done at Phase 1B. Therefore, Yew San's basis for denying Ley Choon's expenses incurred between October 2011 and July 2012 has not been made out.

Phase 3

95 In relation to Phase 3, Yew San simply states that the excavated earth at Phase 3 had been "substantially disposed of". It refers to a meeting held on 12 September 2011 at which it was recorded that 84,847m^3 of earth was to be excavated at Phase 3 as at 7 September 2011. Yew San's lorry chits from 7 September 2011 to February 2012 show that about 72,000m^3 of earth had been excavated and disposed of during that period. By simple arithmetic, that means that some 12,847m^3 worth of work remained incomplete.[113]

96 I had some difficulty understanding the purport of this submission. By the very submission that it had only *substantially* completed its work at Phase 3, Yew San effectively admits that it had not completed at least some of its work there. Based on Yew San's own calculations, there remained more than two

---

112 IAN-1 at p 249, para 51.1.

113 PCS at paras 85–86.

thousand lorry loads of earth to be disposed of (at $6m^3$ per lorry load).[114] Clearly, Ley Choon is entitled to bring a counterclaim in respect of those portions of the works left incomplete, even if the overall works can be considered substantially complete.

Phase 4

97 Likewise, I note that it is not Yew San's submission that the works at Phase 4 were in fact completed. Instead, Yew San argues that since Phase 4 is a "fill" area, where no excavation works were carried out, Ley Choon's claim for excavation, transportation and disposal of earth cannot concern Phase 4.[115]

98 In my view, this argument runs into difficulty because Ley Choon's claim for the costs of *internal* transfer of earthworks material (see at [36(a)] above) does potentially concern the fill works at Phase 4 since the excavated material at Phase 3 was transported to Phase 4 for the fill works. In any case, even if the expenses claimed by Ley Choon do not concern the fill works at Phase 4, it remains open for Ley Choon to claim in respect of incomplete work at Phases 1B and 3.

99 I therefore find that Yew San had failed or neglected to complete its works, and that Ley Choon had incurred costs in stepping in to complete those works. I reject Yew San's submission that the costs incurred by Ley Choon were unrelated to the works at Phases 1B, 3 and 4. Accordingly, Ley Choon is entitled

---

114 DRS at para 187(b).

115 PCS at para 84.

to relief in respect of the costs incurred. I turn now to the quantum of those costs.

Quantum

100 The Incomplete Earthworks Counterclaim encompasses both (i) expenses incurred in engaging external contractors (evidenced by invoices from those subcontractors) and (ii) expenses incurred by Ley Choon itself in mobilising its own resources (evidenced by material collection notes (the "Material Collection Notes") and lorry movement chits ("Lorry Movement Chits")).[116]

(1) The subcontractors' invoices

101 The total value of the subcontractors' invoices is $321,153.58. A summary of the subcontractors' invoices is set out at para 96 of Mr Koh's AEIC, and copies of the invoices are exhibited at pages 264 to 290. Mr David Ong ("Mr Ong"), counsel for Yew San, did not challenge the validity or accuracy of the invoices at trial.[117]

102 However, as was discussed at [87] above, Ley Choon had not pleaded its claim for the costs of transporting suitable material to the site, and is therefore not entitled to any relief in respect of costs incurred for the same. The invoices relating to the transportation of material *to* the project site are described at serial

116 DCS at paras 697–698.

117 DCS at paras 700, 713.

numbers 10, 11, 12, 13, 14, 15 and 17 of the list of invoices, with a total value of $91,812.85.[118]

103 Therefore, I allow Ley Choon's claim for the remaining sum of $229,340.73 under the subcontractors' invoices.

(2) Material Collection Notes and Lorry Movement Chits

104 The work done by Ley Choon itself is recorded in two forms – Material Collection Notes and Lorry Movement Chits, exhibited at pages 153 to 263 of Mr Koh's AEIC.

105 Ley Choon had, initially, claimed the sums of $92,070.00 and $495,180.00 on the basis that the Material Collection Notes and the Lorry Movement Chits evidence 1,023 trips[119] and 5,502 trips made respectively.[120] However, Mr Ness candidly pointed out that some of the Lorry Movement Chits reflect trips made to multiple locations throughout Singapore (and not just the project site), and he quite rightly disregarded such trips, leaving 1,808 Lorry Movement Chits. Mr Ness further noted the risk of duplications given that no explanation was given as to the difference between the two types of record; some Lorry Movement Chits might record a single movement also recorded by a Material Collection Note. On this basis, Mr Ness very fairly only accepted the 1,808 Lorry Movement Chits, an assessment which Mr Ong did not challenge in cross-examination. I do note that Mr Ong did briefly touch on the Lorry

---

118 DRS at para 180.

119 DCS at para 707.

120 DCS at para 709; 8.AB 4172; 8.AB 4192 to 9.AB 5268.

Movement Chits in his cross-examination of Mr Koh; he did get Mr Koh to agree that two trips did not concern the Agreement.[121] I find that these two trips were more than adequately taken care of by Mr Ness' acceptance of only 1,808 out of 5,502 trips. I note that Ley Choon has since (belatedly) given an explanation of why the two types of records are mutually exclusive in its written closing submissions,[122] but those definitions are not in evidence and cannot be considered.

106 In relation to the costs incurred per trip made, Ley Choon submits that the market rate, based on what Ley Choon itself was charged by the subcontractors it engaged to carry out the disposal works, was in the range of $90 to $100 per load.[123] Mr Ness agreed that that was a fair estimation of the market rate, and adopted a rate of $72 per load in his own calculations.[124] Mr Ness' evidence in this regard went unchallenged by Mr Ong during the trial.[125]

107 I accept Mr Ness' assessment and find that Ley Choon may only claim upon 1,808 Lorry Movement Chits at a rate of $72 per trip. The value of the claim for work done by Ley Choon is therefore $130,176.00.

(3) Conclusion

108 I therefore allow the Incomplete Earthworks Counterclaim in the sum of $359,516.73, being the sum of $229,340.73 under the subcontractors' invoices

---

121 Tr/09.02.18/18-20

122 DCS at para 705.

123 DCS at para 702.

124 IAN-1 at para 244.

125 DCS at para 702.

and $130,176.00 under the Lorry Movement Chits and Material Collection Notes.

The Sub-grade Material Counterclaim

109 Ley Choon counterclaims for the cost of supplying suitable material for the sub-grade ("the sub-grade material").[126]

110 As noted at [87] above, the claim for the supply and/or delivery of sub-grade material was not pleaded by Ley Choon. It appears that Mr Ong was aware of this, but although it was raised at the hearing of Yew San's application to compel the disclosure of certain documents,[127] it was never raised at the trial, nor in written submissions. Further, I note that Mr Ong did not object when counsel for Ley Choon, Mr Ravi Chelliah ("Mr Chelliah"), cross-examined Mr Leo in relation to the supply of the sub-grade material on the ground that the point had not been pleaded. Importantly, Mr Ong had himself cross-examined Ley Choon's Mr Koh on the same point.[128]

111 Since neither party has taken this point during the trial or in submissions, and I see no irreparable prejudice or harm to Yew San, I will proceed to deal with this claim on the basis that the parties require me to do so.

112 In determining the Sub-grade Material Counterclaim, the following issues fall for decision:

---

126 DCS at paras 717–721.

127 Tr/12.09.17/19/11–19.

128 Tr/26.09.17/104–105.

(a) Did Yew San have an obligation to supply the sub-grade material under the Agreement?

(b) If so, what is the quantum of loss suffered as a result of Yew San's failure to supply the sub-grade material?

Did Yew San have an obligation to supply the sub-grade material under the Agreement?

113 The relevant provisions are cll (iv) and (v) of Appendix A of the Agreement, the material portions of which are identical:

> (iv) For Cut Area, supply, deliver and fill CAG-approved earth/soil from [Yew San's] own sources or earth/soil excavated within the site … for the construction of subgrade.
>
> In situation where there is a shortage of CAG-approved earth/soil from [Yew San's] own sources, [Ley Choon] shall, upon seeking CAG's approval, source for asphalt milled waste or recycled graded stones or any sub-base material in substitution of the CAG-approved earth/soil. [Yew San] shall provide transport to bring in these sub-base material to site.
>
> (v) For Fill Area, supply, deliver and fill CAG approved earth/soil from [Yew San's] own sources or earth/soil excavated within site … up to the specified subgrade level …In situation where there is a shortage of CAG-approved earth/soil from [Yew San's] own sources, [Ley Choon] shall, upon seeking CAG's approval, source for asphalt milled waste or recycled graded stones or any sub-base material in substitution of the CAG-approved earth/soil. [Yew San] shall provide transport to bring in these sub-base material to site.

114 Ley Choon argues that cll (iv) and (v) require Yew San to source for suitable material *off-site* from its own sources, and only if none is available will the proviso (*ie*, the second paragraph of cll (iv) and (v)) be engaged, thereby triggering Ley Choon's obligation to source for *alternative material*.[129]

---

129 DRS at para 140.

115 Some contextual background will be helpful in construing these provisions. From the evidence at trial, it was not disputed that for earthworks in Singapore, contractors like Yew San are able, depending on a double-coincidence of wants, to obtain soil from other sites at little or no cost or, at times, even get paid instead for taking soil from another site. This happens when earthworks at another site involves the levelling of undulating ground or excavation and the contractor of that other site has to dispose of the surplus soil. Specialist contractors like Yew San who keep their ear to the ground are then able to take that soil, either without cost but only providing the lorries to carry away the excavated material, or as I said, possibly at a fee, depending on whether the other contractor is having difficulty disposing of such soil. One can understand this reality given the size constraints and the highly built-up density of Singapore. The reverse will also apply where Yew San has to dispose of unsuitable soil which may be unacceptable for the higher specifications of an airport sub-grade, but may be suitable fill for other sites. Where these other sites need fill, Yew San may be able to charge a fee for supplying the soil it excavated from the site. Certain kinds of soil on the other hand, like marine clay, which is not suitable for any site, has to be disposed of at a relatively high cost.[130]

116 Appendix A also contains cl (vi) which provides that for cut and for fill areas, Yew San is to stockpile and transfer to fill areas, earth/soil from Yew San's own sources or excavated within the site. This is consistent with the above in that Yew San could obtain soil from other sites and, within site limitations, stockpile such soil on site for future use. I therefore am broadly in agreement with Ley Choon's construction at [114] above. There is evidence, which I

130 PCS at para 65; Tr/27.09.17/18/21 to 27/28.

accept, that Yew San is an experienced earthwork contractor whereas Ley Choon's expertise lies in pipes and pipework as used in a civil engineering context as well as drains and culverts. The Agreement clearly called for Yew San to use suitable material, approved by CAG, for the sub-grade. The Agreement required Yew San to obtain this material from its own sources or the material it had excavated at the site. That primary responsibility fell on Yew San in the first instance. It was only where there was a shortage of suitable material from Yew San's sources that Ley Choon's obligation to source for milled waste or recycled graded stone or any duly approved sub-base material in substitution of the suitable material would be triggered.

117 Yew San submits that the proviso had been triggered because it "did not have any CAG approved soil", such that "[m]ost of the CAG approved soil for back-filling (OA and other approved material) in the Project had to be provided by [Ley Choon]… from its own sources".[131] In his AEIC, Mr Leo deposed that the soil to be used for the sub-grade was a special grade of soil that had to be CAG-approved and if the soil that had been stockpiled from the excavated areas was not suitable to be used for the sub-grade, then it was Ley Choon's obligation to source for the same at their cost.[132] This was not what was provided for in cll (iv), (v) and (vi) which clearly provided for Yew San to obtain the fill *from its* "*own sources* or earth/soil excavated within the site" [emphasis added]. I think it is of some significance that obtaining suitable fill from Yew San's "own sources" came before earth or soil "excavated within the site". Under the Agreement, in the second paragraph, Appendix F, under "(e) Earthwork and

131 PCS at para 67.

132 LKS-1 at para 17

Subgrade Preparation", it is stated that "[t]he top 1.0m of the earth subgrade for pavement works shall be approved material supplied from Contractor's [*ie*, Ley Choon's] own source." There is no reference to excavated material from the site. The reason for this can be seen in the borehole logs provided to Ley Choon under the Main Contract, (which was available for Yew San's inspection), where the data logged shows little optimism for obtaining suitable material from the site excavation. Under cross-examination, it became clear that Mr Leo's own view of Yew San's obligation to supply suitable material was an extremely thin one: If Yew San had the material on hand or if it was readily available on the market, Yew San would supply it, but not otherwise.[133] When Mr Chelliah suggested that Yew San would have a better network of contacts for sources of suitable material than Ley Choon, Mr Leo avoided answering by stating: "Ley Choon knew other contractors. He could have asked other contractor to source. I was not the only one".[134]

118 In my view, that is so thin an interpretation of Yew San's obligation to source for and supply suitable material as to defy commercial sense. Yew San was an experienced earthworks subcontractor; it was expected that Yew San would have a wider network of contacts, which it could tap on in the event of shortage of material from the site itself.[135] It was only in situations of shortage of suitable material from Yew San's own network of sources – such that *alternative* material (such as hardcore or graded stone) would have to be procured – that the proviso would be engaged. This means Yew San had to

---

133 Tr/21.09.17/70/24–25.

134 Tr/22.09.17/86/20–22.

135 Tr/22.09/17/85–87.

adduce evidence of reasonable efforts to obtain suitable material for the sub-grade fill but that it was unable to obtain the same before the obligation of Ley Choon kicked in.

119 In my judgment, it is not enough for Yew San to simply assert that it did not have any suitable material from its own sources; especially not when Ley Choon was itself able to successfully find other sources of suitable material. Other than a bare assertion, Yew San did not adduce evidence to show that there was a shortage of suitable material despite its reasonable efforts to obtain the same. I therefore find that the proviso in cll (iv) and (v) had not been engaged, and that it remained Yew San's obligation at all material times to supply all of the sub-grade material. Having failed to do so, Yew San had breached cll (iv) and (v) and is liable to Ley Choon for the costs of procuring the sub-grade material incurred.

Quantum

120 Instead of proving the costs it incurred in procuring and transporting the sub-grade material by producing invoices or lorry chits, Ley Choon's approach was to determine the volume of sub-grade material by deducting the volume supplied by Yew San from the total volume required, with the logical inference being that the remainder must have been supplied by Ley Choon. This volume is then multiplied by an assumed cost per unit of sub-grade material supplied.[136]

121 I find this approach quite problematic especially in light of the evidence that Ley Choon did not have to pay for (and, on occasion, was paid to receive)

---

136 DCS at para 718; IAN-1 at paras 255–264.

some of the sub-grade material.[137] Ley Choon claims the costs that it incurred in procuring and transporting the sub-grade material. It is trite law that a claimant must prove his loss – in this case, loss in the form of the costs incurred in having to procure and transport the sub-grade material. That would have been readily available to Ley Choon. To enable it to backcharge these costs to Yew San, it would be entirely reasonable for Ley Choon to gather these invoices and payments therefor to substantiate the backcharge.

122 In the circumstances, I find that it is incumbent on Ley Choon to adduce evidence of the costs it *actually* incurred in procuring and transporting the sub-grade material, instead of simply urging the court to accept a measure calculated on the basis of certain assumptions as to the quantity of material supplied and the price at which it was obtained.

123 I therefore allow the Sub-grade Material Counterclaim in principle, but as Ley Choon has not proved its loss, I award only nominal damages of $100.00 in respect of it.

Alternative quantum analysis

124 In the event I am wrong and this is taken up elsewhere, I deal with Ley Choon's proposed approach to its problem in proving its damages. Ley Choon submits that the quantum of damages to be awarded for the Sub-grade Material Counterclaim is a function of (i) the quantity of sub-grade material supplied by Ley Choon and (ii) the cost per load of sub-grade material supplied.

---

137 PCS at para 65; Tr/27.09.17/18–21, 27–28.

(1) Quantity of sub-grade material

125 Instead of producing evidence of the volume of sub-grade supplied, Ley Choon's approach is to first determine the total volume of sub-grade material that was required and then subtract the volume of sub-grade material supplied by Yew San (if any), with the logical inference being that the remainder must have been supplied by Ley Choon. Yew San made no objections to the adoption of this approach.

126 The total volume of sub-grade material was ascertained in this way. As previously mentioned (at [11] above), construction of the sub-grade was only required where taxiways and aprons were to be built. Mr Koh's evidence is that the total paved area is 171,126.0m^2, comprising the flexible pavement area of 138,708.8m^2 and the rigid pavement area of 32,417.2m^2. The volume of the sub-grade material required is obtained by multiplying the total paved area by the 1.0m depth of the sub-grade layer, for a total volume of 171,126.0m^3.[138] These calculations were not challenged at trial.

127 As for the volume of sub-grade material from sources on-site, it is undisputed that most,[139] if not all,[140] of the excavated material from the site was found unsuitable for use in the sub-grade. Even if some of the excavated material was found suitable, there was no evidence as to the quantity found suitable. In the circumstances, it is assumed that none of the excavated material from the site was suitable for use in the sub-grade.

---

138 KSG-1 at para 35.

139 LKS-1 at para 18.

140 KSG-1 at para 34.

128 As for the volume of sub-grade material from Yew San's own off-site sources, Yew San averred that some $35,759.40 of suitable material was supplied. Based on the invoices rendered in respect of the $35,759.40, Yew San supplied 478 lorry-loads of suitable material at $20 per load and 2,387 lorry-loads at $10 per load for a total of 2,765 lorry-loads. I accept that the average lorry-load is about 6m^3, once bulking is accounted for.[141] At 6m^3 per load, the quantity of suitable material supplied by Yew San (according to its invoices) was 16,590m^3.[142] Although Yew San's claim for the $35,759.40 was eventually abandoned (see [34] above), Mr Leo's evidence that Yew San supplied the suitable material still stands; Ley Choon's response to Yew San's claim had not been that the suitable material was not in fact supplied, but that, *inter alia*, no oral agreement that it would pay Yew San for the supply had been reached, and that the supply was part of Yew San's scope of works under the Agreement and could not constitute an additional variation thereto.[143] On this basis, Yew San supplied 16,590m^3 of sub-grade material.

129 Given that the total volume of sub-grade material required was 171,126.0m^3, and that Yew San had supplied 16,590m^3 of that quantity, I accept that Ley Choon had supplied the remaining volume of 154,536m^3, or 25,756 loads at 6m^3 per load.

---

141 Tr/14.02.18/44–46.

142 IAN-1 at paras 256–258.

143 DCS at paras 767–775.

(2) Cost per load

130 Ley Choon proposes three different prices: (i) $72.00 per load is the market rate according to Mr Ness; (ii) $20.00 per load is the higher rate charged by Yew San in its claim for the transportation of sub-grade material; and (iii) $10.00 per load is the lower rate charged by Yew San.

131 The evidence relating to the cost of transporting the sub-grade material was severely lacking. No explanation was given as to why Yew San had dropped the price from $20.00 to $10.00 per load, beyond saying that Yew San had reduced the price at Ley Choon's request.[144]

132 It appears that Ley Choon was, on at least some occasions, paid to receive the sub-grade material (see [115] above). However, the evidence was unclear as to the occasions when Ley Choon was paid to receive the sub-grade material and if so, how much it was paid.

133 In the circumstances, I adopt the price of $10.00 per load of 6m^3.

134 As stated above, in the event I am wrong and this is taken up elsewhere, on the alternative basis I find the Sub-grade Material Counterclaim in the sum of $257,560.00, being the cost of obtaining 25,756 loads (at 6m^3 per load) of sub-grade material at $10.00 per load.

144 LKS-1 at para 74.

The Indemnity Counterclaim

135 Ley Choon counterclaims for an indemnity in respect of liquidated damages imposed on Ley Choon by CAG under the Main Contract pursuant to cl 3.1 of the Agreement:[145]

> **3. Liquidated Damages, Penalties and Phase Construction and Completion**
>
> 3.1 Appendix B1-B2 refers. In the event CAG under the terms and conditions of the Main Contract is entitled to impose liquidated damages and/or penalties on [Ley Choon], similarly, by default, [Yew San] shall be fully liable to the extent that cause of action is attributable to any act, omission or breach (including negligence) by [Yew San], or its officers, employees, agents or sub-contractors.
>
> [emphasis in original]

136 The relevant phases of work which are the subject of Ley Choon's counterclaim are Phases 1B, 2A, 3 and 4. No liquidated damages were imposed by CAG in respect of Phase 1A and it is undisputed that Yew San had no work at Phase 2B.[146] While Yew San submits that Ley Choon's counterclaim ought to be confined to Phases 3 and 4, as pleaded, I have little hesitation in rejecting this submission as it is clear that the references to Phases 3 and 4 in para 21 of the Defence and Counterclaim were not meant to be exhaustive. Paragraph 21 avers that Yew San completed the phases of work late and failed to complete it in accordance with the schedule set out in the Agreement; that schedule encompassed all phases of work. The second sentence of para 21 then avers "*In particular*, Phase 3 and Phase 4 were completed late as [Yew San] failed and/or neglected to carry out any work from the last quarter of 2011 or the first quarter

---

145 1.AB 2.

146 DCS at para 461; IAN at p 50, para 264.

of 2012" [emphasis added]. This is all the more clear when read in light of the surrounding paragraphs, such as paras 18 and 22. In any case, it does not appear that Yew San was labouring under any misapprehension as to the case it had to meet, seeing as Mr Ong spent a considerable amount of time cross-examining both Mr Koh and Mr Ness on Phases 1B and 2A.[147] I therefore proceed on the basis that the relevant phases are Phases 1B, 2A, 3 and 4. Under the Agreement, the relevant portions of the project schedule in Appendix C were as follows:

Phase	**Duration (weeks)**	**Duration (days)**	**Estimated Start Date**	**Estimated Finish Date**
1B	8	56	23 June 2010	18 August 2010
2A	12	84	28 June 2010	20 September 2010
3	25	175	15 January 2011	9 July 2011
4	20	140	23 March 2011	10 August 2011

137 As between employer and main contractor, cl 16.1(1) of the Main Contract entitles CAG to impose liquidated damages on Ley Choon if the works are not substantially completed within the stipulated time for completion or any extensions of time ("EOT") granted by the Superintending Officer.[148] The daily rate of liquidated damages payable for the relevant phases are as follows:[149]

147 DRS at paras 13–16.

148 1.AB 66.

149 1.AB 10; 2.AB 571.

Phase	Liquidated damages (per day)
1B	$3,000.00
2A	$4,600.00
3	$3,400.00
4	$6,500.00

138 CAG informed Ley Choon of the quantum of liquidated damages due by way of letter dated 25 March 2015. The overall delay is given by the duration between the contractual date for completion and the actual date of substantial completion. After subtracting the EOT granted, what remained was the culpable delay. Liquidated damages were imposed by CAG on Ley Choon for the relevant phases as follows:[150]

Phase	Overall delay (days)	EOT granted (days)	Remaining delay (days)	Liquidated damages payable
1B	457	311	146	$438,000.00
2A	438	379	59	$271,400.00
3	368	116	252	$856,800.00
4	397	150	247	$1,605,500.00
Total:	**-**	**-**	**-**	**$3,171,700.00**

139 Yew San did not dispute CAG's entitlement to impose liquidated damages on Ley Choon nor the quantum of liquidated damages so imposed. The

150 3.AB 1453–1457.

sole question before me was as to the proportion of the liquidated damages imposed by CAG on Ley Choon that were *attributable* to the acts, omissions or breaches of Yew San.

140 Ley Choon submits that Yew San's works were in delay, and that Yew San's delay directly led to the imposition of liquidated damages by CAG because Yew San's earthworks were the critical predecessor to the completion of the works. Since the sub-grade and pavement works had to be built up from the formation level, no follow-on work could commence until Yew San had completed the earthworks. Essentially, any delay in Yew San's earthworks would necessarily result in at least an equivalent follow-on delay to the rest of the works which were to follow.

141 The evidential limitation in Ley Choon's case is that the CAG assessments of overall delay and the EOT awarded were concerned only with the overall position for each phase, and not the position of Ley Choon *vis-à-vis* its subcontractors. The assessment of delay, for example, does not state the proportion of the delay owing to earthworks (which were Yew San's responsibility) as opposed to the spreading, levelling, compaction and inspection of the sub-grade works (which were Ley Choon's responsibility). Likewise, Ley Choon's itemised claims for EOT did not give the complete picture and this was made worse as the EOT was granted as an overall figure without any breakdown as to which EOT events CAG had approved and which it had rejected, and therefore offered no clues as to the proportion of EOT that was granted in respect of Yew San's works.[151]

---

151 IAN-1 at p 49, para 160.5.

142 To this end, Ley Choon engaged an expert on delay analysis, Mr Ness to give his opinion on (i) the duration of subcontract delay; and (ii) the appropriate proportion of the CAG-awarded EOT that should be "passed down" to Yew San. Mr Ness adopted the following methodology to determine the proportion of liquidated damages attributable to Yew San:[152]

(a) Ascertain from the documentation, for each phase, the commencement and completion date of Yew San's work so as to ascertain the overall time taken by Yew San to complete its work in that phase, comparing this to the time allotted in Appendix C of the Agreement to ascertain the number of days that Yew San was in delay.

(b) Yew San ought not to be held liable for delay where it is assessed that:

(i) the delay to Yew San's works was caused by Ley Choon; or

(ii) the delay was caused by events for which an EOT would have been granted by CAG to Ley Choon. In so far as the EOT was likely granted in respect of events relating to Yew San's work, the EOT would be "passed down" to Yew San.

(c) Determine the period of culpable delay attributable to Yew San by subtracting the period of excusable delay (for which EOT is "passed down") from the total delay, and multiply this by the daily rate of liquidated damages payable for the total quantum payable. If this

---

152 IAN-1 at paras 153–160; Tr/14.02.18/70/11 – 72/6.

> determination exceeds the CAG-imposed amount, it ought to nonetheless be capped at the CAG-imposed level, since Yew San is liable only to indemnify Ley Choon for any liquidated damages actually imposed by CAG.[153]

143 Applying this method, Mr Ness calculated three alternative quanta of liability, and termed these Options A, B and C. Options A and B were calculated on the basis that Yew San was responsible only for the earthworks, and not the sub-grade works – *ie*, the completion dates adopted tracked the completion of the earthworks, and not the sub-grade works.[154] I should note that, as discussed above, Yew San *was* involved in the sub-grade works, albeit only in the filling of suitable material. Ley Choon then carried out the spreading, levelling, compaction and inspection of the layers within the sub-grade. That said, the evidence as to the progress of the works was not of a sufficiently detailed level as to allow for an analysis differentiating between the time taken for the fill for each of the four 250mm layers of sub-grade (which was Yew San's work), as against the time taken for the spreading, levelling, compaction and inspection (which was Ley Choon's work). Instead, Ley Choon's monthly progress reports to CAG ("MPR") record the "laying+ compaction+ inspection" of each sub-grade layer as a single item of work.[155] Mr Ness accepted this same point upon my questioning (see [160] below).[156] That being the case, *for the purposes of Mr Ness' delay analysis*, the completion dates of Yew San's work (as regards Options A and B) were based on the completion of Yew San's earthworks only

---

153 IAN-1 at p 286 at paras 31–32.

154 IAN-1 at p 43 at paras 141–142.

155 See, for example, IAN-1 at p 559 at s/n 28–30.

156 Tr/13.02.18/100/6–17.

(*ie*, the cut or fill works up to formation level). In other words, he disregarded, for the purposes of the delay analysis, Yew San's work in the sub-grade (notwithstanding that, as explained, Yew San was responsible for dumping the suitable material for the sub-grade layers for Ley Choon to then spread, level and compact). Therefore, under Options A and B, Mr Ness proceeded on the basis that Yew San's work was complete when the earthworks were completed.

144 As between the two (*ie*, Options A and B), Option A was based on the completion dates most favourable to Yew San, based on Yew San's best case as pleaded, and Option B was based on the completion dates as determined by Mr Ness.

145 Option C stood apart from Options A and B in that it was calculated on the basis that Yew San *was* responsible for the sub-grade work. In other words, the completion dates adopted tracked the completion of the sub-grade works in their entirety (*ie*, including spreading, levelling compaction and inspection). This option is not applicable in view of my finding that it was Ley Choon which was responsible for the spreading, levelling, compaction and inspection of the sub-grade layers.

146 While the three options presented were helpful in painting a general picture of the liability which Yew San faced given each set of completion dates, I did not adopt any of the options as presented by Mr Ness. Instead, I found it necessary and appropriate to apply Mr Ness' methodology to each phase of works individually, and to descend into the evidence cited by Mr Ness in support of his conclusions and make my findings as to the commencement and completion dates and the likely EOT awards for each phase.

147 Yew San takes issue with Mr Ness' conclusions on two levels. On a more general level, Yew San submits that Mr Ness' methodology is flawed and should be rejected in its entirety. Three points of criticism are raised: (i) evidence of the commencement/completion dates are factual issues which ought to be determined on the basis of the evidence of the factual witnesses, not the opinions of an expert;[157] (ii) Mr Ness failed to consider if other sources of delay (other than the delay in Yew San's earthworks) might have contributed to the overall delay. In particular, Mr Ness did not adequately assess the delay in the sub-grade works that Ley Choon had to carry out;[158] and (iii) Mr Ness' methodology misapplies cl 3.1 of the Agreement since his assessment of the liquidated damages for Phases 1B and 2A exceed the sum imposed by CAG.[159]

148 More specifically, Yew San takes issue with Mr Ness' assessments of the commencement/completion dates and the likely EOT awards for each phase.

149 I shall first deal with the three general objections raised by Yew San, before examining the commencement/completion dates and EOT analysis for each phase.

Admissibility of expert opinion in delay analysis

150 In determining the commencement and completion dates of each phase, Mr Ness based his opinion on documentary evidence of the as-planned and as-

157 PCS at paras 93, 98, 117–120, 124.

158 PCS at paras 105, 107, 110–113, 115.

159 PCS at para 101.

built progress of the works, such as Yew San's progress claims, correspondence between Yew San and Ley Choon, and Ley Choon's MPRs to CAG.

151 Yew San submits that it is "highly unusual" that Ley Choon relies on an expert's assessment as to what those dates were, based on the documentary record, instead of calling witnesses of fact to establish those dates. The commencement and completion dates of the works are factual issues, evidence of which must be given by witnesses with personal knowledge of the matter.[160] Ley Choon's Mr Yap was the person in charge of the Seletar Airport Project, but was not called to give evidence on the aforementioned dates.[161] I was told that he and one Mr Wong had left Ley Choon's employment.[162] Ley Choon did call Mr Koh, who started work at the project site sometime in October 2010.[163] However, Mr Koh did not give any direct evidence as to the commencement or completion dates of Ley Choon's work, nor was he the person who prepared the MPRs,[164] which Mr Ness relied heavily on in coming to his conclusions.

152 I should perhaps, digress at this juncture to voice my view that this is the kind of case that should never have come to trial for a number of reasons. I have already alluded to the lack of primary evidence on the quantities of work completed by Yew San when Ley Choon alleged they stopped work. Relevant witnesses were not before me. This directly affects the assessment of the many claims and counterclaims brought by the parties. Doing the best I can on the

---

160 PCS at para 118.

161 PCS at para 119.

162 Tr/27.09.17/42–43.

163 KSG-1 at para 8.

164 Tr/07.02.18/21/20, 66/2, 66/21.

evidence presented or proceeding on the burden of proof at trial is not always the most satisfactory means to achieve a just resolution. The absence of reliable evidence on this whole issue of liquidated damages also causes great difficulty in assessing these claims. I have had to spend a lot of time combing through the evidence to look for relevant evidence. A number of discrete claims are made but there was no evidence on the quantum incurred. One of these included "nominal damages for the damage to the 6.6 kv HT cable damaged by Yew San, as may be determined by the Court."[165] The submissions (voluminous on one side) are, I am sad to say, unhelpful and contain many general allegations but are short on references, evidence and relevant or helpful details required to assess claims of this nature in the building and construction industry. The amounts involved in this dispute do not justify this full-blown trial. The parties would have been much better off if this dispute had proceeded to mediation or neutral expert evaluation.

153 That said, I return to the disputes before me. While direct evidence of the commencement/completion dates from factual witnesses would in the usual case be the best and most probative evidence of the timing of the delay, it is not uncommon, where such evidence is unavailable, for parties to lead expert evidence based on a contemporaneous documentary record of the progress of works (*Keating* at para 8-058):

> *It is common in construction disputes for the parties to lead evidence from programming experts providing delay analysis and conclusions on the causes and timing of periods of delay.* Technically it might be said that such evidence as to the factual timing, duration and causes of delay to individual activities and the completion of the works as a whole represents inadmissible opinion evidence relating to what are essentially issues of

165 DCS at para 802.

> primary or direct fact. To the extent that programming experts adduce direct factual evidence it is normally derived from some other source, such as a contemporaneous record of progress on site or a witness statement from a person actually involved in the works. Thus it is often the first task of experts instructed by the parties to seek to agree such primary factual material. The key opinion evidence produced by a programming expert is usually the location or route of the critical path. Programming experts also provide opinion evidence concerning the relationships between the individual activities that made up the works and inferences as to the timing and causes of delay drawn from the direct evidence. *The courts routinely permit and consider such expert evidence, recognising that such sophisticated analysis is often necessary in complex cases*, although the usefulness of the same to the central issues of fact that need to be decided in delay claims is sometimes doubted. [emphasis added]

154 In this case, besides the usual objective contemporaneous documents like letters and emails (which admittedly are not as numerous in this case as compared to other construction disputes), there are other objective documents like minutes of meetings, which involved other parties like CAG and their consultants, as well as detailed MPRs which were periodically submitted by Ley Choon to CAG and their consultants. These MPRs contain considerable contemporaneous and objective evidence. The MPR for June 2010 (6 June to 5 July 2010), dated 6 July 2010, comprised 35 pages.[166] The subsequent MPRs for July and August 2010 increased to 41 and 52 pages respectively.[167] The MPR for June 2011 comprised 57 pages.[168] That MPR (as with the other MPRs) contained detailed descriptions of that month's "Work Progress"; it contained details not only of the phases of work being carried out but also broken down to smaller plots identified by gridlines. To take Phase 1B as an example, there were

---

166 IAN-1 at p 343.

167 IAN-1 at pp 379, 422.

168 IAN-1 at p 536.

13 items which comprised the earthworks in that phase and it included descriptions like "Laying of sub-grade 3rd layer (OA 98% 1st layer) at Phase 1B2~1B1" and "Laying of sub-grade 2nd layer (OA 95% 2nd layer), at Phase 1B4~IB3".[169] There were also items that covered Ley Choon's scope of works. This "Work Progress" report covered 8 pages and there were 3 pages for the planned work in the month ahead. In addition, there were:

(a) detailed bar charts for work programmes, with bars for "Actual Schedule", "Plan Schedule" and "Progress";[170]

(b) detailed descriptions of items of work broken down into a few hundred individual items and activities combined with bar charts; (a good example, can be taken from the MPR for August 2010, dated 7 September 2010, Item 192, which falls within "Phase 1B (N336.92 to N513.88 [the Northing references]), (E254 to E323 [the Easting references])" reads: "Excavation (Cutting & removal of soil)", "20% [Actual % complete]", "58 days [Duration])", "Jul 6 '10 [Start]", " Sep 1 '10 [Finish]" and followed by a bar chart);[171]

(c) drawings (complete with gridline references) showing the works being carried out for the month with colour coding for the various layers completed and with descriptions;[172] and

---

169 IAN-1 at pp 544, 559–560.

170 IAN-1 at p 558.

171 IAN-1 at p 444.

172 IAN-1 at pp 571–576.

(d) strategic photographs of the work carried out or in progress with an accompanying plan showing the location from which the photographs were taken and the direction in which the camera was pointed.[173]

There was accordingly sufficient evidence from which certain conclusions could be drawn.

155 In its closing submissions, Yew San, citing *Khoo Bee Keong v Ang Chun Hong and another* [2005] SGHC 128 at [78], argued "if the cross-examiner can show that the facts on which the expert relies are unreliable, his conclusions will not be acceptable".[174] However, Yew San never criticised the accuracy of the documentary base relied on by Mr Ness. On the contrary, Mr Ong's cross-examination of Mr Koh seemed to suggest that he was content to proceed on the basis that the MPRs contained accurate and reliable data on the status of the works:[175]

> Q: Would you agree with me that the contents, description and statements in the progress reports was a true and accurate reflection of the status of the progress of works in this project?
>
> A: Yes.

156 In light of the foregoing, there can be no objection taken on principle to Mr Ness' reliance on the MPRs and other contemporaneous documents, in arriving at his conclusions on the duration of the delay. What weight it should be given is another matter and it would be up to Mr Ong, if he wished to or

---

173 IAN-1 at pp 577–589.

174 PCS at para 124.

175 Tr/27.09.17/70/15–19.

could do so, to show, by cross-examination, that Mr Ness' reliance on the various documents was wrong. This reliance is relevant considering that Yew San itself preferred dates extrapolated from the MPRs where those dates were more favourable than the evidence given by Yew San's own factual witness, Mr Leo. In relation to the works in Phase 3, Mr Leo's evidence was that Yew San had commenced work as early as August or September 2010.[176] Yet, Yew San's position in its closing submissions was that the date "to be adopted is 9 April 2011 as shown in the Construction Schedule [of the MPR]".[177]

Alleged failure to consider other sources of delay

157 Yew San's second charge against Mr Ness is that his methodology makes no room for consideration of other sources of delay that might have contributed to the overall delay, such as a delay in the spreading, levelling, compaction and inspection of the sub-grade layers.[178] While Yew San accept that its excavation works were a critical event, so was the spreading, levelling, compaction and inspection of the layers within the sub-grade construction works; Mr Ness did not consider if the delay in Ley Choon's sub-grade works that was the operative cause of the overall delay.[179] Instead, Mr Ness had assumed that a delay in Yew San's works would automatically lead to an equivalent delay in the overall works.[180]

---

176 Tr/21.09.17/10.

177 PCS at para 144.

178 PCS at paras 105, 107.

179 PCS at paras 110–115.

180 Tr/13.02.18/81/2–8.

158 Mr Ness says that that is no mere assumption, but was true as a matter of "construction logic".[181] The excavation to formation level is the critical activity to the start of any other activity in that area; no other work could commence until Yew San's excavation in that area was complete. It therefore followed that any delay in the earthworks would automatically result in a corresponding delay to any downstream works.[182] When Mr Ong suggested that other delays might have been the predominant cause of the overall delay, Mr Ness disagreed in the following terms:[183]

> Q: My question is, you must first establish if in fact Yew San's delay caused the delay in the overall completion of the works… because there could have been other works that was the predominant cause of the delay in the overall completion of the respective phases in this project. Agree?
>
> A: No, I don't agree, no. The issue is that every single part of this job, the first part has to be the removal of the topsoil and the excavation, that is throughout the work. If that work is delayed, the subsequent follow-on work is delayed.
>
> Q: Agree. …

159 At trial, Mr Ong suggested that Ley Choon's other civil works (*eg*, construction of drainage) could have contributed to the overall delay because they did not commence only when Yew San had completed the whole of the excavation works in a phase, but were commenced "concurrently" with the earthworks.[184] While it was true that the excavation and civil works were in progress "concurrently" in the sense that both types of works were underway

---

181 Tr/13.02.18/83/10–16; IAN-1 at p 46 at para 151.

182 Tr/13.02.18/82/16–24.

183 Tr/13/.02.18/79–80.

184 Tr/13.02.18/82/2–13.

within the same phase, the point remains that the civil works could only commence in those areas where the earthworks had been completed.[185] Mr Ong then asserted that some of Ley Choon's civil works were independent of the completion of Yew San's excavation works, but was unable to point to any example of work that was not dependent on Yew San first completing its excavation works.[186]

160 Finally, Yew San also asserts that Ley Choon's delays in the compaction of the subgrade caused delay to Yew San's works. This is because the sub-grade had to be constructed in layers; Yew San, or so it argues, had to wait for Ley Choon to finish compaction of each lower layer before it could continue to filling works. But this contention is without basis. Yew San was not able to put forward any evidence to show that there were in fact delays in the compaction works. In fact, as Mr Ness pointed out, there was never a situation where Yew San's trucks were lined up and ready to dump the suitable material for the fill operation; rather, the critical driver of the works was Yew San's (insufficient) provision of trucks (to carry excavated material away, and to carry out the fill where required):[187]

> Court: And am I correct to say actually there's no complete evidence of that, like when the first 250 layer started, when the compaction started, when the compaction ended, and then when the next 250 layer started?
>
> A: Correct, sir. That is why the graph at appendix M shows that the critical driver was that volume of trucks. If compaction is holding up the earthworks, it means that the amount of trucks that's delivering it is going to have a big pile of material waiting to be compacted, which

185 Tr/14.02.18/72/7–22.

186 Tr/13.02.18/84–85, 108–109.

187 Tr/13.02.18/100/6–17. See also Tr/13.02.18/44/1–4.

> Mr Koh addressed and said there were no occasions where that happened.

161 Mr Ness' view is not without basis. Mr Ness produced a table at Exhibit D10 from which a graphical presentation of the planned and actual quantities of Yew San's work were juxtaposed. The planned quantities of work were stated as the total volume of earth which needed to be filled or excavated as part of Yew San's earthworks, and was derived from a figure adopted by Yew San itself in all of its progress claims – 503,878m^3, rounded up to 504,000m^3 in Exhibit D10.[188] The actual quantities of work were derived from Mr Ness' analysis of Yew San's lorry chits, which, given the average lorry load of 6m^3, provided some insight into the volume of earth ultimately moved by Yew San. What the graph in Exhibit D10 shows is that there was always a significant gap between the actual and planned quantities of work. In other words, Yew San's pace of work was always slower than the pace required if it were to complete those works on time.

162 In a similar vein, Mr Koh's evidence, which I accept, was that he did not, on any of his site visits, ever observe that Ley Choon's compaction works were holding up Yew San's work, nor was he ever told the same by any of Ley Choon's or Yew San's staff:[189]

> 63. I can say that at no times on my visits did I see piles of Yew San's tipped material awaiting spreading. None of the [Ley Choon] site staff or any of Yew San's on-site staff ever informed me that Yew San had piles of suitable material waiting to be spread.

---

188 IAN-1 at para 182.

189 KSG-1 at paras 63–64.

> 64. At no time do I recall that were any failures in the fill to achieve the required compaction such that we had to stop or slow down the delivery of suitable material from Yew San. …

163 I also note that there is no evidence that CAG complained that Ley Choon's spreading, levelling, compaction and inspection of the sub-grade layers was slow or behind schedule or that there were insufficient bulldozers and rollers on site. That would have been an inevitable consequence if the spreading, levelling, compaction and inspection of the sub-grade were slow or delaying construction.

Alleged misapplication of cl 3.1 of the Agreement

164 In his expert report, Mr Ness assessed Yew San's liability for liquidated damages at $468,000.00 for delays in Phase 1B and $345,000.00 for delays in Phase 2A.[190] These sums exceed the quantum of liquidated damages imposed by CAG on Ley Choon for those phases. Since cl 3.1 of the Agreement is an indemnity provision, Yew San argues that the fact that Mr Ness' assessed amount exceeded the sums actually imposed by CAG shows that Mr Ness had "misapplied Clause 3.1 of the Agreement" and that he "does not understand the purport and intention of the parties".[191]

165 Ley Choon accepts that Ley Choon's entitlement to be indemnified cannot exceed the extent of Ley Choon's own liability to CAG. Its position is that this was an oversight on Mr Ness' part, and not an example of a flaw in his analysis.[192]

---

190 IAN-1 at p 60, para 192.

191 PCS at para 101.

192 DRS at paras 212–213.

166 I agree. Mr Ness' first expert report was dated 1 February 2017 ("the first report"). Following the exchange of AEICs, Mr Ness prepared a revised version of his expert report dated 13 July 2017 ("the updated report"). This is exhibited in Mr Ness' AEIC dated 14 July 2017. In Appendices F and G to the first report, Mr Ness calculated the liquidated damages payable for Phases 1B and 2A as $291,000.00 and $271,400.00 respectively.[193] However, it later transpired that the EOT for soil exchange ought not to be passed down to Yew San since the soil exchange was not part of Yew San's earthworks.[194] Since the CAG documents specify the duration of EOT given for soil exchange, the EOT "passed down" to Yew San was decreased by the duration of EOT awarded for the soil exchange, and the Yew San's liability for the liquidated damages was subsequently increased, subject to a cap equal to the actual sum of liquidated damages actually imposed by CAG (see [142(c)] above).[195] While the cap was correctly accounted for in Appendix O, the cap was omitted in the main body of the updated report, which reflected Yew San's liability as $468,000.00 and $345,000.00 for the two phases.

167 I do not think that this demonstrates any flaw in Mr Ness' methodology; rather, it is an instance where the methodology was applied without a cap as required by the indemnity in cl 3.1 of the Agreement. In any case, at no point during his two-day cross-examination was it put to Mr Ness that his failure to cap Yew San's liability constituted or revealed a flaw in his methodology.

---

193 IAN-1 at pp 279, 286.

194 IAN-1 at pp 59–60.

195 IAN-1 pp 332–333 (Appendix O).

168 I wish to briefly return to the point made at [166] above regarding the EOT for soil exchange, which was given entirely to Ley Choon, and was not passed down to Yew San. The reason for this is that the soil exchange works (which, as mentioned, were undertaken by Ley Choon) did not affect Yew San's earthworks, which, as stated at [143] above, were the only works that were taken into account for the purposes of Mr Ness' delay analysis (Options A and B). This is because the soil exchange occurs *at* the formation level. Soil at the formation level had to be compacted to 90% of AASHTO density, and if the soil at formation level could not be compacted to that density, it had to be excavated, and exchanged or substituted with other suitable material. As such, soil exchange works are only done *after* the earthworks (*ie*, after the area has been cut or filled to formation level), and *before* the sub-grade works (because the sub-grade layers sit on the formation level). It stands to reason then that the soil exchange works could not have caused any delay to the *earthworks* because the soil exchange works come *after* the earthworks on the critical path. While the soil exchange works could potentially have caused delay to the sub-grade works (because it comes *before* the sub-grade layers are laid), this contingency is not of concern because, as mentioned, Mr Ness' analysis of Yew San's delay did not include Yew San's work on the sub-grade layers. For this reason, the soil exchange works could not have affected the delay attributable to Yew San, and as such, any EOT awarded in respect of the soil exchange works need not be passed down to Yew San.

169 Having dealt with Yew San's general objections to Mr Ness' methodology, I turn now to the analysis of his assessment of the duration of delay and the award of EOT for each phase.

Delay and EOT analysis

170 In brief, Mr Ness' methodology (outlined in full at [142] above) for determining the proportion of liquidated damages attributable to Yew San is as follows:

(a) Determine the total duration of delay by reference to the commencement and completion dates of the work in each phase. As noted at [143] above, the completion dates adopted by Mr Ness pertained to the completion of Yew San's *earthworks* only, and not its fill works in relation to the sub-grade layers (Options A and B).

(b) Subtract from the total duration of delay the period of excusable delay. This includes periods of delay (i) established to have been caused by Ley Choon; or (ii) for which Mr Ness assesses that EOT was likely to have been awarded by CAG.

(c) The remaining delay is the duration of delay attributable to Yew San, for which Yew San is liable according to the daily rate of liquidated damages payable for each phase.

171 As was previously mentioned, the relevant phases which are the subject of the Indemnity Counterclaim are Phases 1B, 2A, 3 and 4. I shall deal with each in turn.

(1) Phase 1B

172 Both parties accept that the commencement date of Yew San's works at Phase 1B was 21 June 2010.[196]

173 Based on the MPR for June 2011, Mr Ness adopted 30 June 2011 as the completion date for the works at Phase 1B.[197] As was earlier mentioned, this completion date was based on the completion of the *earthworks*, and not the sub-grade works. Mr Ness relied on, amongst other things, the plan for Phase 1B in the June 2011 MPR, which showed that the *earthworks* had been completed.[198]

174 In other words, the total time taken to complete the Phase 1B works was 374 days. Given that Yew San were to complete the works within eight weeks of commencement,[199] that means that Yew San's works in Phase 1B were in delay by 318 days.

175 As for the appropriate EOT to be awarded, Mr Ness' initial assessment was that 221 days of EOT (out of the total of 311 days awarded by CAG to Ley Choon) related to Yew San's work and ought to be "passed down".[200] Of this, 78 days were awarded for soil exchange, which was subsequently found not to be part of Yew San's work. Although 78 days' delay ought to be added, Mr

196 PCS at para 166; DCS at para 463; DRS at para 377; IAN-1 at p 244, para 25; Tr/20.09.17/59–60; 3.AB 1563.

197 DCS at para 464; IAN-1 at p 250, para 53.

198 IAN-1 at p 572.

199 PCS at para 166; DRS at para 377; 1.AB 11.

200 IAN-1 at p 60 at para 192; p 277, paras 52–55; p 333.

Ness only added 49 days (or $147,000.00 at $3,000.00 per day) due to the cap on Yew San's liability under the indemnity, resulting in a final sum of $438,000.00 for Phase 1B.[201]

176 Yew San does not dispute the correctness of Mr Ness' assessment of the duration of the delay in Phase 1B. Rather, it argues that a further 121 days' EOT ought to have been granted.[202]

177 This submission itself belies some confusion as to how cl 3.1 of the Agreement ought to be applied. Mr Ness' role is not to make a fresh award of EOT, but to give his opinion, based on Ley Choon's EOT applications and CAG's grants of EOT, on the proportion of the EOT eventually granted that ought to be "passed down" to Yew San. Mr Ness cannot "grant to [Yew San] an extension of time" based on some additional event proposed by Yew San,[203] and Yew San is misguided to the extent that it requests a finding to that effect. Applying cl 3.1 of the Agreement, the key issue is whether the delay is *attributable* to Yew San. I therefore proceed on the basis that the thrust of Yew San's submission is that 121 days' delay is not *attributable* to Yew San.

178 Yew San offers two reasons (neither of which were put to Mr Ness): (i) Yew San was not timeously given possession of the worksite,[204] and (ii) Yew San's failure to complete its works within the duration specified was "caused by [Ley Choon's] planned sequence of works". Ley Choon's own planned

---

201 IAN-1 at p 333.

202 PCS at para 179.

203 PCS at para 179.

204 PCS at paras 175, 177.

commencement date for Phase 1B4 (the last of four sub-phases of Phase 1B) was 21 September 2010, meaning that, given the planned duration of eight weeks, Yew San could only complete the works at Phase 1B on 15 December 2010. Therefore the delay from the period 16 August 2010 (being the original, contractual completion date) to 15 December 2010 (being the earliest date Yew San could actually complete the works, given the late commencement date of Phase 1B4) cannot be attributed to Yew San.[205]

179 With respect to the first reason, while Yew San makes an oblique reference to Ley Choon's site clearance and cable detection works (both of which had to be completed before Yew San's earthworks could begin),[206] no allegation was made that Phase 1B was not timeously provided to Yew San *because* the site clearance or cable detection works were actually in delay, much less refer to any evidence proving the same. Cable *detection* works are a different process from cable *diversion*. I should add that at trial, a major issue was whether the removal of the HT Cable had caused Yew San delays to their works. Mr Ness' answer, which I accept, was that Yew San had a lot of work remaining in delay even before it reached the HT Cable. His secondary point was that the removal of the HT Cable only involved a narrow corridor of 4m on either side of the cable. This point was not pursued by Yew San in its submissions. It was also never suggested to Mr Ness that cable detection works were the source of delay.

180 Turning to the second reason, Yew San's reference to the schedules in the MPR were to the *planned* programmes. The fact that certain sub-phases were

---

205 PCS at paras 178–180.

206 PCS at paras 168–169.

planned to commence later than the contractually stipulated date suggests that there had been delays to the progress of the works, but does not indicate culpability for the delay.[207] The mere fact that Ley Choon had planned for Phase 1B4 to commence at a later date is not proof that the delay ought to lie at Ley Choon's door. In any case, the evidence appears to suggest that even if possession of Phase 1B4 was handed to Yew San earlier, Yew San still had uncompleted work at Phases 1B1, 1B2 and 1B3 such that a late handover of Phase 1B4 would not have made a difference.[208]

181 In the circumstances, I do not accept Yew San's submission that an additional 121 days of delay was not attributable to it. On balance, I adopt Mr Ness' assessment and find that Yew San is liable for $438,000.00 of the liquidated damages imposed by CAG on Ley Choon pursuant to cl 3.1 of the Agreement.

(2) Phase 2A

182 Mr Ness assessed that the commencement date for Yew San's works in Phase 2A was 21 June 2010.[209] According to Mr Ness, the MPR for August 2010 states that Phase 2A earthworks started on 21 June 2010. However, what is actually stated is that earthworks had commenced at Phase *1B*.[210] In relation to Phase 2A, it was the "[c]learing of site" at Phase 2A that had begun on 21 June 2010. It is undisputed that site clearance is Ley Choon's responsibility.[211] Mr

---

207 DRS at paras 410, 414.

208 DRS at paras 438–442; 3.AB 1757, 1771–1772, 1821.

209 IAN-1 at pp 252–253, paras 60–63.

210 3.AB 1563.

211 Tr/07.02.18/15/4–6.

Ness also referred to the minutes of meeting on 5 October 2010,[212] but that only states that the commencement date of Phase 2A as a whole was 21 June 2010, without saying when the *excavation* had commenced.

183 Yew San's position is that the earthworks at Phase 2A commenced only on 15 August 2010,[213] based on the MPR for August 2010, which states that "[e]arthworks in Phase 2A (Land Side) Phase 1 (For Taxiway Area)" had started on 15 August 2010.[214] While this document was not put to Mr Ness, Mr Ness had himself referred to it in response to Mr Ong's suggestion that Yew San's earthworks commenced on a date later than 21 June 2010. Mr Ness opined that the earthworks had not commenced because Yew San itself had placed stockpiles on the area to be cut,[215] referring to the MPR for August 2010, which states that the removal of the stockpiles had commenced on 19 July 2010.[216]

184 In my judgment, the date when Yew San began to remove the stockpiles from Phase 2A, *viz*, 19 July 2010, ought to be adopted as the commencement date. Mr Ness' adoption of 21 June 2010 as the commencement date is not borne out by the documentary evidence that he referred to. Mr Ness' evidence under cross-examination was that even before excavation could commence, the stockpiles of earth that Yew San had placed on the worksite had to be removed. I accept that this task forms part of Yew San's earthworks. The documents that

212 7.AB 4013, item 2.5.1.

213 PCS at para 186.

214 3.AB 1576, item 259.

215 Tr/13.02.18/151/1–18.

216 3.AB 1576, item 250.

Mr Ness referred to at trial show that the removal work had begun, at the earliest, on 19 July 2010.

185 Ley Choon further argues that since the MPR for July 2010 states that sub-grade works were already underway, that must mean that at least some of the excavation works had commenced and been completed by July 2010.[217] However, while the narrative lists "[l]aying of OA 95% 1st layer" as part of the works in progress,[218] the construction programme itself states that none of the sub-grade works had commenced.[219] Ley Choon also refers to various photographs purporting to show that the sub-grade work was in progress in the month of July 2010,[220] but none of these photographs were put to any of the witnesses, nor did Mr Ness refer to them in his AEIC.

186 In the circumstances, I find that, on balance, the commencement date of Yew San's earthworks at Phase 2A was 19 July 2010.

187 I turn now to the completion date of Phase 2A. Yew San claims that it had "substantially completed" its earthworks by 5 November 2010 on the basis that the sub-grade construction works were underway by that date.[221] I am unable to accept this submission. It does not follow from the fact that *some* sub-grade work was in progress that therefore *substantially all* the earthworks were complete. As stated above, this site is very large. The works in general were

---

217 DRS at paras 477–478.

218 3.AB 1518.

219 3.AB 1528, items 257–259.

220 3.AB 1538–1539.

221 PCS at paras 189, 191, 214.

performed progressively; sub-grade works could start in a particular area so long as the earthworks in that area were complete.[222] In any case, Yew San's submission is contradicted by the documentary evidence. The MPR for November 2010 shows that the earthworks for the landside portion of Phase 2A1 was still only 75% complete at that time.[223] Completion was only achieved sometime between 5 February 2011 and 5 March 2011.[224]

188 Mr Ness adopted 5 August 2012 as the completion date of Yew San's works. According to Mr Ness, the MPR for July 2012 shows that excavation works were still taking place at that time.[225]

189 Yew San's position is that since it had left the site by 18 February 2012, it should not be held liable for delay to works taken over by Ley Choon after that date.[226] Under cross-examination, Mr Ness accepted that if Ley Choon took a greater amount of time than what Yew San should have taken in completing the works taken over, that delay would not be attributable to Yew San:[227]

> Q: What I'm saying is that if Ley Choon did the works and Ley Choon themselves had delayed or completed those works late, then would you agree with me that in respect of LAD you cannot push any liability for LAD for works, for delay of works carried out after 18 February 2012 to Yew San?
>
> A: I think the issue of Ley Choon taking over Yew San's work is a question of whether or not Ley Choon took an

222 DRS at para 482.

223 DRS at para 485; 3.AB 1760, item 9.

224 DRS at para 486; 4.AB 1945, item 9.

225 IAN-1 at p 254, para 70.

226 PCS at para 217.

227 Tr/13.02.18/155/20 – 156/16.

> inordinate – or a greater amount of time than what Yew San should have taken. If they took over and said there was 20 days to go and they took 200 days, then that would be, clearly – without an extension of time justification, that would be not attributable to Yew San… But if Yew San left, let us say, 20 days' worth of work there and Ley Choon took it over and finished it in 20 days, that would appear to be the responsibility of Yew San not finishing that work. But that is purely a legal issue about who took over, and what the ramifications of that leaving the site is.

190 As the claimant in the counterclaim, Ley Choon has the burden of proving that the delay is attributable to Yew San. According to Mr Ness, the delay after Ley Choon took over the works cannot be attributed to Yew San if Ley Choon "took an inordinate – or a greater amount of time than what Yew San should have taken". However, Ley Choon did not adduce any evidence of the quantity of work it had taken over from Yew San nor the time that Yew San would have had to complete those works. It is therefore not possible to determine if Ley Choon had added to the duration of delay in the time it was working on Yew San's incomplete works. In the circumstances, I find that the time taken to complete the earthworks after Ley Choon had taken over ought not to be taken into account.

191 Exactly *when* Ley Choon had taken over the works is also far from clear on the evidence before me. Certainly, there was no indication as to when and what work items had been taken over by Ley Choon in each phase. Rather, Mr Leo's evidence was that Yew San had completed most of its excavation works by 18 February 2012, though Yew San was still transferring soil from Phase 3 to Phase 4 in March and April 2012.[228] In the circumstances, seeing as

---

228 Tr/20.09.17/92–93.

Yew San's work after 18 February 2012 appears to be confined to internal transfer of soil not involving Phase 2A, having considered all the evidence, I am prepared, on balance, to adopt 18 February 2012 as the date after which most of Yew San's works at Phase 2A had been taken over by Ley Choon.

192 Therefore, the time taken to complete the works after 18 February 2012 ought not to be considered part of Yew San's delay. I accept that as far as Yew San is concerned, the completion date of its works in Phase 2A was 18 February 2012.

193 Yew San further argued that Mr Ness had failed to account for two events of delay caused by Ley Choon.

194 The first concerns the realignment of a boundary fence. Yew San argues that the period between 5 November 2010 to 5 January 2011 ought not to be attributed to Yew San as delay in the works because Yew San was unable to work in this period because a boundary fence had not been realigned. A boundary fence divided Phase 2A1 into the "landside" and "airside". The fence was due to be shifted such as to "convert" what used to be the airside into a landside portion. According to Yew San, it could only start work at the airside portion of Phase 2A1 after the fence had been shifted on 5 January 2011.[229]

195 In reply, Ley Choon argues firstly that the fence could not have held up Yew San's works since Yew San's landside earthworks were already in delay; the works within landside portion of Phase 2A (which undisputedly remained unaffected by the fence) had not been completed even after the fence was shifted

[229] PCS at paras 193–197, 215–216.

in January 2011.[230] The work of "[r]emoval of turf" remained to be completed in the month following 5 January 2011.[231] Secondly, airside works could be commenced even before the realignment of the fence, as long as a safety distance from aircraft operating in the area was observed.[232] While Mr Koh admitted that there might be "some impact on the movement of trucks", he explained that there was no great difficulty and that trucks could access the airside via an access gate, though inspections might be carried out.[233] In fact, some night work was indeed carried out on the airside portion of Phase 2A1; 10% of the earthworks had been completed by 5 December 2010.[234] I therefore do not accept Yew San's submission that its works were delayed by the realignment of the boundary fence.

196 The second argument raised by Yew San concerns the soil exchange. Yew San says that Mr Ness had failed to take into account the fact that soil conditions at Phase 2A1 were unsuitable for compaction, necessitating the process of soil exchange, whereby unsuitable material is substituted with suitable material.[235] However, the soil exchange took place at formation level; in other words, it could not have affected Yew San's excavation since it took place *after* Yew San had excavated to formation level (see [168] above).[236] I

---

230 DRS at paras 493–494.

231 3.AB 1826.

232 DCS at para 554.

233 DRS at para 495; Tr/07.02.18/23–27.

234 DCS at para 554; DRS at para 497; 3.AB 1760, item 49.

235 PCS at paras 199, 211.

236 DRS at para 502.

therefore reject Yew San's submissions that its works were delayed by the soil exchange works.

197 To recap, Yew San's works had commenced on 19 July 2010 and were completed when it left the site on 18 February 2012. The total time taken to complete the Phase 2A earthworks was therefore 579 days. Given that Yew San had 12 weeks (or 84 days) to complete the works,[237] that means that Yew San's works in Phase 2A were in delay by 495 days. Mr Ness' assessment that 120 days' EOT ought to be passed down to Yew San[238] was not challenged by Yew San. Therefore, Yew San were culpably late by 375 days. However, seeing as only 59 days' liquidated damages were eventually imposed on Ley Choon by CAG, the maximum extent of Yew San's liability in respect of Phase 2A is therefore capped at $271,400.00.

(3) Phase 3

198 Mr Ness had originally assessed that the commencement date for Phase 3 earthworks was 2 August 2010. In the updated report, he reviewed his assessment and adopted 10 January 2011 as the commencement date instead, on the basis of the minutes of meetings on 21 December 2010 and 15 March 2011.[239]

199 Yew San's position is that the commencement date of its works at Phase 3 was 9 April 2011. It points to item 2.5.3 of the minutes of meeting on

---

237 1.AB 11.

238 IAN-1 at p 284, paras 20–21.

239 IAN-1 at p 257, para 86; 7.AB 4034, 4041.

21 December 2010, which states that the earthworks would be commenced after the fence diversion had been completed.[240] According to the MPR for April 2011, the fence diversion was completed on 10 April 2011 and "Excavation (cutting until the subgrade level) (2nd part)" commenced on 9 April 2011.[241]

200 Ley Choon's reply is that there is no evidence that Yew San's excavation works were in any way affected by the fence diversion. The diagrammatic progress plan in the MPR for February 2011 shows that the fence diversion work (dotted in purple) was carried out simultaneously with the excavation work (shaded in yellow).[242] Ley Choon pointed to several examples of excavation works that were underway well before the fence diversion was completed on 10 April 2011. For example, the MPRs for January and February 2011 state that "Excavation (cutting) and transport of good soil to Phase 1B and Phase 4 compacted backfilling area" were in progress during the period 6 January 2011 to 5 March 2011.[243] Topsoil removal, too, was in progress in February 2011.[244] In the 21 December 2010 minutes that Yew San itself referred to, item 2.5.4 states that "removal of excess earth from the site" was in progress.[245]

201 In fact, Mr Leo's evidence under cross-examination was that Yew San had commenced work at Phase 3 much earlier – on 1 September 2010.[246] Yew

---

240 7.AB 4034.

241 4.AB 2066, item 18.

242 DRS at para 287(iii); 4.AB 1959.

243 DRS at para 287; 3.AB 1887; 4.AB 1933.

244 4.AB 1951, item 8.

245 7AB 4034.

246 DRS at paras 276–278; Tr/21.09.17/17/8–12.

San's own Progress Claim No 3 dated 11 October 2010 for work done as at 30 September 2011 claims that 46,800m^3 of excavation work had been done at Phase 3.[247] This suggests that the works were commenced far ahead of schedule, since the Phase 3 works were originally slated to begin only on 15 January 2011 according to Appendix C1 of the Agreement.[248]

202 However, this is a claim for an indemnity against liquidated damages imposed by CAG, and since CAG had adopted 10 January 2011 as the commencement date for the purpose of the imposition of liquidated damages,[249] Mr Ness quite rightly adopted that date, even if the evidence tended to suggest that the works were in fact commenced earlier. I therefore adopt and find 10 January 2011 to be the commencement date of Yew San's works at Phase 3.

203 Regarding the completion date of Phase 3, Yew San says that it had *substantially* completed the works by 5 October 2011.[250] That position is untenable since Yew San's own pleaded case is that it completed its Phase 3 works on or around 18 February 2012.[251] In any case, it is, in my view, quite clear that the works had not been completed by 5 October 2011. Yew San itself admits as much in its closing submissions, stating that there was a portion of Phase 3 that remained unexcavated as at 5 October 2011.[252] Yew San's own Progress Claim No 7 dated 18 October 2011 for work done up to 17 October

---

247 DRS at para 279; 8.AB 4138–4139; Tr/14.02.18/24–25.

248 1.AB 11.

249 3.AB 1456.

250 PCS at para 153.

251 Statement of Claim (Amendment No 1) at para 9(j).

252 PCS at para 148.

2011 claimed that 75% of the excavation works had been completed, leaving 25% outstanding.[253] Progress Claim No 8 dated 23 December 2011 for work done up to 22 December 2011 claims only 80% work completed.[254]

204 Mr Ness adopted 6 March 2012 as the completion date of the earthworks at Phase 3.[255] The first MPR to record the Phase 3 earthworks as complete was the MPR for March 2012, which tracked the progress of works between 6 March 2012 and 5 April 2012. As such, the earliest date on which the earthworks could have been completed was 6 March 2012.[256]

205 Yew San further argues that it had left the site by 18 February 2012, and that if there was any delay in its works, the delay was not caused by Yew San.[257] However, as was discussed above at [191], Mr Leo admitted that Yew San remained involved in the transfer of soil excavated at Phase 3 to the fill area at Phase 4 up till March or April 2012.

206 I therefore find that the completion date of Yew San's works at Phase 3 was 6 March 2012.

207 In sum, Yew San's works had commenced on 10 January 2011 and were completed on 6 March 2012. The total time taken to complete the Phase 3 earthworks was therefore 421 days. Given that Yew San had 25 weeks (or 175

253 DRS at para 307; 8.AB 4143–4144.

254 DRS at para 309; 8.AB 4145–4146.

255 IAN-1 at p 261, para 105.

256 IAN-1 at pp 260–261, paras 103–105.

257 PCS at para 153.

days) to complete the works,[258] Yew San's works at Phase 3 were in delay by 246 days. Mr Ness' assessment that 116 days' EOT ought to be passed down to Yew San[259] went unchallenged by Yew San. Therefore, Yew San were culpably late by 130 days. The liquidated damages imposed by CAG were $3,400.00 per day for Phase 3. As such, Yew San's liability to Ley Choon under the indemnity in respect of Phase 3 is $442,000.00.

(4) Phase 4

208 The parties agree that the commencement date of Yew San's works at Phase 4 was 21 March 2011.[260] This was the date adopted by CAG in its minutes of meeting of 15 March 2011.[261]

209 As to the date of completion, Mr Ness adopts 5 May 2012 as the date of completion of the earthworks based on the MPRs for April 2012 and May 2012.[262] In its closing submissions, Yew San did not dispute the completion date adopted by Mr Ness. Instead, it submitted that it is not liable for the CAG-imposed liquidated damages because:[263]

(a) the delay in Phase 4 was caused by Ley Choon's slow rate of compaction works;[264] and

---

258 1.AB 11.

259 IAN-1 at p 328.

260 PCS at para 157; DCS at para 632; IAN-1 at p 328.

261 IAN-1 at p 328; 7.AB 4042.

262 IAN-1, p 266, para 130.

263 PCS at para 163.

264 PCS at paras 159–162.

(b) Yew San left the site in or around March 2012, and therefore should not be held responsible for any delay after that date.

210 Yew San's first ground of objection is that it cannot be held liable for any delay because its work of dumping the soil into the fill area at Phase 4 was held up by the slow pace of Ley Choon's compaction works at that phase. However, Mr Koh's unchallenged evidence was that there was never a situation whereby Ley Choon could not spread and compact the dumped material such that Yew San had to hold back on its filling works.[265] Mr Koh was present at the site at least two times a day, and at no time did he observe stockpiles of dumped material awaiting spreading, nor was he ever informed by any of Yew San's staff of the same. If such a situation had developed, the operations manager would have given instructions to Yew San to stop or slow down its delivery of suitable fill material, but no such instructions were ever given.

211 In fact, Yew San was unable to point to any evidence to substantiate its allegation that the compaction works at Phase 4 were "slow". Yew San's point was that the CAG inspections of the compacted material would have taken quite some time, but the "Request for Inspection of Work" forms[266] show that the vast majority of these inspections were conducted and passed within a matter of hours on the same day.[267]

212 I turn to Yew San's second ground of objection. As was discussed in relation to the delay analysis for Phase 2A, I adopt the most favourable view to

---

265 DRS at para 346; KSG-1 at paras 63–65.

266 14.AB 8642 – 49.AB 35096.

267 KSG-1 at para 64; Tr/14.02.18/59/1–7.

Yew San, *viz*, that the duration of the works *after* Yew San left the site ought not to be counted against it as any delay within that period would not be "attributable" to Yew San within the meaning of cl 3.1 of the Agreement (see [190] above). Mr Leo's unchallenged evidence was that his work at Phases 3 and 4 continued until "[s]ometime in March, April [2012]" before Mr Yap, the project manager from Ley Choon, told him that Yew San could leave (see [191] and [205] above).[268] Mr Leo did not state the precise date on which he left. In the circumstances, I shall adopt 1 April 2012 as the date on which Yew San completed its works at Phase 4.

213 To conclude, Yew San's earthworks had commenced on 21 March 2011, and, at least as far as Yew San was concerned, were completed on 1 April 2012. The total time taken to complete the Phase 4 earthworks was therefore 377 days. Given that Yew San had 20 weeks (or 140 days) to complete its works,[269] Yew San's works at Phase 4 were in delay by 237 days. Mr Ness' assessment that 150 days' EOT ought to be passed down to Yew San[270] was not challenged by Yew San. Therefore, Yew San were culpably late by 87 days. The liquidated damages imposed by CAG were $6,500.00 per day for Phase 4. Therefore, Yew San's liability to Ley Choon under the indemnity in respect of Phase 4 is $565,500.00.

---

268 Tr/21.09.18/20–21.

269 1.AB 11.

270 IAN-1 at p 329.

Conclusion

214 Based on the foregoing, I allow the Indemnity Counterclaim in the sum of $1,716,900.00, being:

(a) $438,000.00 in respect of the delay in Phase 1B;

(b) $271,400.00 in respect of the delay in Phase 2A;

(c) $442,000.00 in respect of the delay in Phase 3; and

(d) $565,500.00 in respect of the delay in Phase 4.

The Prolongation Costs Counterclaim

215 Ley Choon counterclaims for staff prolongation costs that would not have been incurred but for Yew San's delay.[271]

216 Yew San argues that to allow the Prolongation Costs Counterclaim would be to allow Ley Choon a double claim.[272] I disagree. The two claims are distinct and address different losses suffered by Ley Choon. The Prolongation Costs Counterclaim addresses loss directly incurred as a result of Yew San's delay, whereas the Indemnity Counterclaim addresses an indirect loss suffered in the form of liquidated damages imposed by CAG on Ley Choon. The Indemnity Counterclaim is not itself a claim for liquidated damages.[273]

---

271 DCS at p 453.

272 PCS at paras 75–76.

273 DRS at paras 163–164.

217 The prolongation cost per day was assessed at $4,025.37 by Mr Koh, Ley Choon's site engineer, and Ms Reanne Toh Ting Xuan ("Ms Toh"), a contract manager with Ley Choon.[274] This figure comprised exclusively of staff costs. Mr Koh and Ms Toh's evidence on the prolongation cost was not challenged by Mr Ong at trial. Ms Toh was not cross-examined.[275]

218 The duration of the prolongation is a rather more vexed point. Mr Ness' opinion on the duration of the prolongation is set out at paras 203 to 212 of the updated report. He explained that the delay on the earlier phases has little impact on Ley Choon's staff costs since the staff would have been working on the later phases anyway. The real additional costs are only incurred after the planned completion date under the Main Contract.[276]

219 Mr Ness then referred to his calculations at Appendices H, I and N of the updated report, and stated that the duration of the prolongation ought to be the number of days which Yew San was found to be in culpable delay (*ie*, the total delay less EOT granted).[277] I am, with respect, unable to agree.

220 In this context, the prolongation costs refer to the overhead costs that would not have been incurred by the main contractor but for the delay of its subcontractor. As Mr Ness had explained, the starting point must be the planned completion date, for that is the date up to which the main contractor would have

---

274 KSG-1 at para 120, pp 299–300; Reanne Toh Ting Xuan's 1st AEIC dated 3 July 2017 at paras 18–22, pp 356–358.

275 Tr/09.02.18/32/16–19.

276 IAN-1 at p 64, paras 204–206.

277 IAN-1 at p 65, para 210–211.

had to incur the overhead costs anyway, even if there had been no delay at all. Taking into account the EOT granted by CAG in respect of Phase 4, the final extended planned completion date of the overall works was 2 August 2012.[278] The final actual completion date of the works at Phase 4 was 6 April 2013.[279] Therefore, on the whole, the works were prolonged by 247 days. Unfortunately, neither party adduced any evidence as to what proportion of this overall prolongation was a direct result of Yew San's delay, and what proportion might be the result of delays in Ley Choon's work. The analysis undertaken with respect to the Indemnity Counterclaim proceeded on a phase-by-phase approach, and cannot simply be transplanted due to the overlaps in the timeframes of each phase. Therefore, I do not think that the duration of Yew San's culpable delay for Phase 4 can be treated as a direct proxy for the duration of prolongation caused by Yew San, contrary to what Mr Ness suggests. It is clear that considerable periods of extension of time were granted by CAG to Ley Choon and from its claims for EOT, there were clearly works within that period and the period of delay that were solely Ley Choon's works.

221 There being no evidence as to the duration of prolongation attributable to Yew San, Ley Choon has failed to discharge its burden on proving the same and I accordingly dismiss the Prolongation Costs Counterclaim.

The HT Cable Counterclaim

222 The parties do not dispute that the HT Cable was damaged by an excavator deployed and managed by Yew San at Phase 1B sometime on or

---

278 3.AB 1457.

279 Tr/09.02.18/23–24; 3.AB 1433.

around 18 November 2010.[280] I therefore find that Yew San is liable for the costs of repairing the cable.

223 As Ley Choon is unable to adduce evidence of the costs of repairing the cable, it seeks only nominal damages in respect of this claim.[281] I award nominal damages of $100.00.

The Topsoil Counterclaim

224 Ley Choon counterclaims for the costs incurred in purchasing and importing topsoil for its turfing works due to Yew San's failure to stockpile topsoil for Ley Choon's use.[282]

225 It is undisputed that Yew San was contractually obliged to stockpile an adequate quantity of topsoil excavated from within the site for Ley Choon's turfing works (cl (vii), Appendix A of the Agreement), and that no topsoil was supplied to Ley Choon by Yew San.[283] Mr Leo's explanation was that he had sold off the stockpiles of topsoil because Ley Choon had instructed him to remove the stockpiles. However, he could point to no records of any instruction to remove the topsoil, much less any instruction or permission given to sell it.[284] Even if Ley Choon had instructed him to remove the stockpiles from Phase 2A, it does not follow that Yew San no longer had an obligation to supply topsoil;

---

280 KSG-1 at para 112, pp 293–298; Tr/09.02.18/109–110.

281 PCS at para 71; DCS at paras 730–733; DRS at paras 151–152.

282 DRS at para 26.

283 1.AB 7; Tr/12.09.17/65/5–8; Tr/20.09.17/81/18–20; Tr/22.09.17/30/3–20, 106–107; Tr/26.09.17/37/10–12.

284 Tr/26.09.17/37/12–18.

rather, Yew San would have to find an alternate site to stockpile the topsoil for Ley Choon's use. I therefore find that Yew San had breached cl (vii) of Appendix A of the Agreement.

226 Ley Choon has led no evidence to prove its loss under this claim and seeks only nominal damages. I award nominal damages of $100.00.

Conclusion

227 In summary, I allow Yew San's Contract Price Claim in the sum of $1,413,470.00.

228 In relation to Ley Choon's counterclaims, I allow the following claims:

Incomplete Earthworks Counterclaim	$359,516.73
Sub-grade Material Counterclaim	$100.00
Indemnity Counterclaim	$1,716,900.00
HT Cable Counterclaim	$100.00
Topsoil Counterclaim	$100.00
Total:	**$2,076,716.73**

229 I dismiss the Incomplete Compaction Works Counterclaim and the Prolongation Costs Counterclaim.

230 Subject to adjustments, if any, due to GST or arithmetical errors, for which parties have liberty to apply, there is a balance of $663,246.73 ($2,076,716.73 – $1,413,470.00) owing from Yew San to Ley Choon.

231 I award interest on the claim and counterclaim sums at the rate of 5.33% per annum from the date of writ and date of counterclaim until the date of judgment respectively.

232 I shall hear the parties on costs.

Quentin Loh
Judge

David Ong and Magdalene Ong (David Ong & Co) for the plaintiff;
Ravi Chelliah, Alison Jayaram and Edmund Chain (Chelliah & Kiang LLC) for the defendant.