

Public Prosecutor v China Construction (South Pacific) Dev Co Pte Ltd - [2006] SGDC 100 (11 May 2006)

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[\[2006\] SGDC 100](#)

Suit No: NEA 128201/2004, 038893/2005, MA 7/2006

Decision 11 May 2006

Date:

Court: District Court

Coram: Shaiffudin Bin Saruwan

Counsel: Colin Goh assisted by Manoj for the prosecution, Joseph Liew assisted by Yusfianto for the defendant

Judgment

11 May 2006

District Judge Shaiffudin Saruwan

The defendant company faces two charges under Regulation 3(1) of the Environmental Pollution Control (Control of Noise at Construction Sites) Regulations 1999. The two charges are as follows:

Charge P1 - NEA 128201/04

You, China Construction (South Pacific) Development Co Pte Ltd, 199201093n of Blk 10 Hoe Chiang Rd #27-02 Keppel Towers Singapore 089315 are charged that you, on 01 December 2004 from 10:00 pm to 11:00 pm, being the occupier of the construction site on Lot 838 (PT) TS 29 at Sinaran Drive (URA land parcel 652), did fail to ensure noise did not exceed permissible limit at construction site in that noise level from 10:00 pm to 11:00 pm (LEQ 1 hr) was recorded at 59.8 exceeded permissible limit of 55.0 DBA and you have thereby contravened Regulation 3(1) of the Environmental Pollution Control (Control of Noise At Construction Sites) Regulations 1999 and committed an offence punishable under Regulation 5 of the aforesaid Regulations.

Charge P2 - NEA 038893/05

You, China Construction (South Pacific) Development Co Pte Ltd, 199201093N of Blk 10 Hoe Chiang Rd #27-02 Keppel Towers Singapore 089315 are charged that you, on 10 March 2005 between 10:00 pm to 11:00 pm, being the occupier of the construction site on Lot 838 (PT) TS 29 at Sinaran Drive (URA land parcel 652), did fail to ensure noise did not exceed permissible limit at construction site in that noise level for LEQ 1 hr from 10:00 pm to 11:00 pm was recorded at 58.3 exceeded permissible limit of 55.0 DBA and you have thereby contravened Regulation 3(1) of the Environmental Pollution Control (Control of Noise At

Construction Sites) Regulations 1999 and committed an offence punishable under Regulation 5 of the aforesaid Regulations.

2. The defendant company claimed trial to the two charges. After four days of trial, I was satisfied that the charges against the defendant company have been proven beyond reasonable doubt, and I duly convicted the defendant company on both charges. After hearing the plea in mitigation, I fined the defendant company \$12,000/- on each charge. I now set out the reasons for the conviction and sentence.

The Case for the Prosecution

3. The prosecution adduced evidence through three witnesses. They are (i) Mulyadi Ahmad (PW1), a Technical Support Officer with the Pollution Control Department, NEA; (ii) Rahmad Sidek (PW2), a Principal Technical Officer with the Pollution Control Department, NEA; and (iii) Charles Lee Chion Kang (PW3), the former Executive Engineer with the Pollution Control Department, NEA.

Evidence of Mulyadi Ahmad (PW1)

4. PW1 testified that part of his job scope was to attend to complaints received in relation to noise from construction sites. The defendant's construction site at Sinaran Drive was one of the construction sites which he had conducted checks. He testified that sometime after 3 Sep 04, he had issued a notice to the defendant to set up a noise meter to monitor the noise level at the Sinaran Drive construction site. He confirmed that the noise meter was set up, paid for by the defendant and the person responsible for its maintenance was the defendant's Environmental Control Officer (ECO) one Mr Teh. PW1 informed the noise meter was placed inside a wooden box and hanged from a tree at the residence at No. 41 Sinaran Drive. This location was decided upon by consensus of the NEA and the defendant company.

5. PW1 testified that on 2 Dec 04, when he opened his e-mail, he noted that there was a public complaint concerning construction noise at the Sinaran Drive site sometime on the night 1 Dec 04. Later that same day, PW1 called up the defendant's ECO, Mr Teh, to find out if there had been any construction work being carried out at the said site on the night of 1 Dec 04. At the same time, PW1 requested that Mr Teh print out the noise chart for the relevant period. PW1 was given the said noise chart (Exhibit P19) from Mr Teh when he visited the construction site in the afternoon of the same day. PW1 said that when he perused the noise chart, he found that there had been a noise violation. According to PW1, Mr Teh had also informed him that there was construction work done on the night of 1 Dec 04, but that he needed to make further investigation as he was not at the construction site that night.

6. The next day, PW1 prepared a report (Exhibit P18) of the investigation which he had carried out at the Sinaran Drive construction site on the afternoon of 2 Dec 04.

7. PW1 further testified that on 11 Mar 05, he noted another public complaint from a resident about construction noise at the Sinaran Drive construction site on the night of 10 Mar 05. He also testified that there had been other similar complaints on 8 Mar and 9 Mar 05. On 11 Mar 05, PW1 called the defendant's ECO, Mr Teh, and requested for the print-outs of the noise charts for the relevant dates. In the afternoon of the same day, PW1 visited the Sinaran Drive construction site and met up with a Mr Choa and Mr Teh. PW1 was then given the relevant noise charts which he had requested. PW1 said that the noise chart (Exhibit P23) for the night

of 10 Mar 05 showed that there was a noise violation after 10 pm that night. He pointed out that the violation could be seen at page 2 of P19, for the date 1 Dec 04, event no. 6 which showed a reading of 59.8 dBA. PW1 also confirmed that the noise charts for the nights of 8 and 9 Mar 05 did not show any noise violations on those nights.

8. PW1 testified that Mr Choa informed him that bore piling work had been carried out on the night of 10 Mar 05. Casting had commenced sometime in the afternoon, but they had encountered difficulties during the bore piling process which had caused the piling to be delayed and extended until at night.

9. PW1 then prepared reports of his investigations into the complaint on 10 Mar 05 (Exhibit P21), and the complaint on 9 Mar 05 (Exhibit P22).

10. PW1 also testified that on the night of 13 Mar 05, he had gone to the Sinaran Drive construction site for a night inspection. He noted that there was no construction work at the site at this time. He recorded the noise reading using a Type 1 portable noise meter. He recorded the noise level reading from outside the residence at No 41 Sinaran Drive. He testified that the portable meter recorded a noise reading of about 51.1 to 51.2 dBA. These readings were taken after 8 pm and at 9.40 pm respectively.

11. PW1 confirmed that the sketch plan P24 correctly depicts the layout of the construction site and its vicinity. He explained that the road in P24 is a no-through road and was used mainly by the residents of Sinaran Drive. The only other traffic would be car owners who parked their cars along the road. He also confirmed that when he visited the place at night, he did not see any vehicular traffic along this road. He also confirmed that the residence at No. 41 Sinaran Drive was about 30 to 40 metres away from the boundary of the defendant's construction site while the Tan Tock Seng Hospital was about 150 metres away from the site.

Evidence of Rahmad Sidek (PW2)

12. PW2 was the immediate supervisor of PW1. He testified that the defendant had complied with a notice (Exh. P25) issued by his department directing the defendant company to set up a Type 1 noise meter at their Sinaran Drive construction site. The distance between the said noise meter and the construction site was about 37 metres to 42 metres. He also explained that the Type 1 noise meter has a tolerance level of ± 0.5 dB, and in some companies in the United States the tolerance level is taken as ± 1 dB.

13. He also testified that he received the two reports which was prepared by PW1 with respect to PW1's investigations into the noise complaints on 1 Dec 04 and 10 Mar 05 at the Sinaran Drive construction site. He explained that upon receiving the reports, he discussed the matter with PW1. They checked the relevant noise charts submitted by the defendant, and found that there had been noise violations on the nights of 1 Dec 04 and 10 Mar 05. Subsequently he sought for and obtained his supervisor's approval to commence prosecution against the the defendant company in respect of the two incidents. The defendant was informed of the decisions via letter.

14. PW2 also informed the court for the complaint on 1 Dec 04, the defendant send a letter of representation to the department dated 13 Jan 05 (Exh. P27). As for the complaint on 10 Mar 05, the defendant send a letter of representation dated 14 Mar 05 (Exh. P28). In this letter

P28, the defendant sought to explain that, inter alia, casting work had extended beyond 10 pm on 10 Mar 05.

15. PW2 explained that there are two permissible levels which the defendant company must adhere to. The first is the 5-minute LEQ noise level and the second is the 1-hour LEQ noise level. PW2 stated that the permissible 5-minute LEQ level was 60 dB and the permissible 1-hour LEQ level was 55 dB. He also explained that although one might violate the 1-hour LEQ level but he might not have violated the 5-minute LEQ level. In this instance case, he explained that as the 1-hour LEQ reading had exceeded the permissible limit, the department did not focus on the 5-minute LEQ reading.

16. PW2 then explained the internal procedures with respect to the decision making process undertaken in the event the department receives a complaint about noise pollution. He said that if the noise level is 56 dB, the department would not initiate prosecution as it is only just above the permissible noise level of 55 dB. Instead, the offending company would be issued with a warning letter. It was also the department's practice that if a reading was not more than 3 dB in excess of the permissible level, the contractor would not be prosecuted, unless he is a recalcitrant. However, PW2 said that this is merely a departmental guideline and it is not specified in the Regulations.

17. PW2 then informed that from Exh. P19, the noise level on 1 Dec 04 between 10 pm to 11 pm was recorded at 59.8 dB, which was 4.8 dB in excess of the permissible level of 55 dB. He then explained how the background noise for the vicinity was derived by him. He took the noise readings between 10 pm to 11 pm on 29 Nov 04 and 30 Nov 04, two days prior to the complaint. For 29 Nov 04, the noise reading was 50.9 dB while the noise reading for 30 Nov 04 was 52.1 dB. He then took the average of the two readings and concluded that the background noise was about 51 dB.

18. PW2 also explained that Exh. P23 showed that the noise level between 10 pm to 11 pm on 10 Mar 05 was recorded as 58.3 dB, which was 3.8 dB in excess of the permissible level of 55 dB. As for the background noise level of the vicinity, he derived this value by looking at the noise levels recorded between 10 pm to 11 pm on the three preceding nights ie, 7th, 8th and 9th March. Exh. P23 showed that the noise level recorded for 7 Mar 04 was 52.2 dB (on page 1); the noise level recorded for 8 Mar 04 was 51.2 dB (on page 2); and the noise level for 9 Mar 05 recorded was 50.6 dB. From these 3 readings, PW2 calculated the background noise to be 51 dB.

19. PW2 had also instructed PW1 and another officer, a Mr Koh, to go down to the Sinaran Drive construction site at night to take readings of the noise level at the vicinity. He explained that he did this so as to physically confirm the background noise level at the said vicinity at night when there was no construction work in progress. However, he indicated that he did not direct the specific time in which PW1 had to measure the noise level.

20. PW2 also explained that when the background noise is higher than the permissible noise level, then the correcting factor as stipulated by the Regulations must be added to the noise reading. But if the background noise level is lower than the noise level, then there is no issue of correcting factors.

Evidence of Charles Lee Chion Kang (PW3)

21. PW3 had been with the Pollution Control Department for 5 years. He holds a Bachelor's degree in Mechanical Engineering, and a Masters in Science (Environmental Engineering).

22. PW3 gave a similar testimony as that given by PW2 in respect of the analysis of the noise charts Exhs. P19 and P23. He further went on to say that in his opinion, for the night of 1 Dec 04, based on Exh. P19, if there had been construction work done that night, it had stopped around 11 pm. For the night of 10 Mar 05, based on Exh. P23, if there had been construction work done that night, it had stopped close to midnight.

23. PW3 then went on to explain that the ideal location to set up a noise meter would be about 1 metre from the affected building and facing the construction site or noise source. If this is not physically possible, as is in this case, he recommended that the equal distance concept be applied. This means that the noise meter should be set up at an equivalent distance from the construction site and the affected building. In this present case, he was of the opinion that the location where the defendant's noise meter was located gave an advantage to the defendant in that the noise meter was further away from the construction site by about 3 metres than that required by the Regulations.

24. He then explained the application of correcting factors into the computation of noise levels. If the background noise is established at 50 dB, and the maximum permissible limit is 55 dB, then the correcting factor to be applied as prescribed in the Third Schedule of the Regulations would be 1 dB. Therefore, the maximum permissible limit allowed would now be 56 dB. If the background noise level is between 51 dB to 53 dB, the correcting factor to be applied for the noise level of 51 dB would be ± 1 dB ie, the permissible level would then be 56 dB, while the correcting factor to be applied for the noise level of 53 dB would be ± 2 dB ie, the permissible level would then be 57 dB.

25. PW3 also testified that from his analysis of the noise charts in Exhs. P19 and P23, he concluded that the background noise level in the vicinity of the Sinaran Drive construction site would be in the region of about 50 to 51 dB. He derived this by taking the average reading for the period between 12 midnight to 6 am. He took the noise level for this period because these were the lowest readings for background noise and that they do not fluctuate a lot. Further, an analysis of the noise levels recorded in P19 and P23 during the day, he noted that the noise level fluctuated between 63 to 70 dB, and this noise levels sometimes continued until 10 pm on some days and until 11 pm or midnight on other days.

26. PW3 also clarified that his department only requires the contractor to set up a Type 1 noise meter. This is because a Type 1 noise meter is the most sensitive noise meter available. The make of the noise meter is not crucial. If the noise meter is of a known make or if the company is an accredited one, his department would only require the manufacturer's or supplier's certificate certifying that the noise meter in use is a Type 1 meter. If the noise meter is of a lesser known make, or if the company is not an accredited one, then the department would conduct a check on the credentials of the company or the make. He also testified that the Type 1 noise meter has a tolerance or accuracy value of between ± 0.5 dB to ± 1 dB.

At the Close of the Prosecution's Case

27. At the close of the prosecution's case, it is clear that on the evidence before me, the prosecution has shown a prima facie case against the defendant company on both charges.

Therefore, I informed the defendant company that I am calling for its defence. The standard allocution was administered to the representative, and the representative elected to give evidence on behalf of the defendant company.

Case for the Defence

Evidence of Teh Kien Seng (DW1)

28. The defence called 6 witnesses. The first defence witness was Teh Kien Seng (DW1) who was also the safety officer and the environmental control officer (ECO) of the defendant company. In particular, he was the ECO at the Sinaran Drive construction site on the two relevant dates. DW1 said that the noise meter which the company had set up at No 41 Sinaran Drive was about 50 metres away from the construction site.

29. DW1 described the construction site at Sinaran Drive in December 04 and March 05. He said that the construction site was divided into two zones – Zone A and Zone B. Both zones have separate entrance and exit points. These are marked by him in the photographs in Exhs. D1 to D4. He informed that if a worker enters Zone A, he cannot then enter Zone B from Zone A, and vice versa. The workers who goes to work on their own motorcycles would park their motorcycles under the tree which is found outside the boundary. For those who are conveyed to and from work by using the company's pick-ups, they would alight and board their transports in front of the main gate at the access road. He also testified that on 1 Dec 04, the road was not opened to the public and that it is a no-through road.

30. DW1 testified that on 1 Dec 04, the defendant company had deployed in total 20 staff and workers at the Sinaran Drive construction site. These comprise the managerial staff, the site engineer, the safety supervisor and construction workers. He could recall that the breakdown comprise 7 managerial or executive staff and less than 10 construction workers. These workers were conducting some housekeeping work, and tidying and cleaning up the office and erecting barricades. DW1 also informed that he had left the site at about 5 pm to 6 pm. He also showed the time sheets for his company's workers which showed that the last worker had left the construction site at 7.08 pm.

31. DW1 testified that the only construction work in progress at the Sinaran Drive construction site on that day was the installation of bore piles. The installation work was done by the defendant's sub-contractor, M/s L & M Construction Pte Ltd. He said that M/s L & M had only deployed about 10 workers at the construction site on that day.

32. DW1 then related the interview he had with PW1 regarding the noise complaint on the night of 1 Dec 04. On the day of the interview, DW1 admitted that he had informed PW1 that there had been work done after 10 pm on the night of 1 Dec 04. He testified that when he received the summons from NEA (Exh. D5), he informed M/s L & M Construction that he would be transferring the fine to them. This was when M/s L & M Construction had informed him that their workers did not do any construction work after 10 pm on the night of 1 Dec 04, and that they had produced evidence of this fact. The evidence comprised workers time sheets and delivery notes of concrete. DW1 explained that the concrete was required for casting the bore piles. And that the concrete must be used within 4 hours of delivery before the concrete hardens. Therefore, taking the time that the deliveries were made, the casting of the concrete must be completed latest by 8.45 pm. Further the workers time sheets furnished

by M/s L & M Construction showed that the workers had stopped work at 10 pm. On the strength of these evidence, DW1 wrote to NEA to explain.

33. DW1 then proceeded to explain the process of casting bore piles. Firstly, the holes are bored in the ground. Concrete is then poured into the holes. The process of pouring concrete must be done without any interruption and before the concrete hardens. Otherwise the quality of the casting would be compromised. Once concrete has been poured, the steel casings and the metal cages would be welded. DW1 testified that on 10 Mar 05, the construction work being done at the site was also the casting of bore piles.

Evidence of Charles Lee Chion Kang (PW3)

34. On 1 Dec 04, DW2 was working as one of the defendant's executive staff at the Sinaran Drive construction site. Her duties include collecting the defendant workers' time sheets at the end of each month, and recording the incoming times and outgoing times of the workers. She would record these times daily. Twice a month – once in the middle of the month and once at the end of the month - she would forward the time sheets to the defendant company's Human Resource Department for computation of salaries and assessment of workers' performance. She also informed that at all times the time sheets would be placed in their respective slots at the time card machine. She said that every worker with the defendant company requires a time sheet. She was not sure whether her company had more than 10 workers at the Sinaran Drive construction site on 1 Dec 04. DW2 left the construction site at 5 pm on 1 Dec 04.

Evidence of Ng Ken Tong (DW3)

35. DW3 was the project engineer with M/s L & M Construction Pte Ltd during the relevant period. He was involved in the project at the Sinaran Drive construction site. His company was the piling sub-contractor. He was the engineer in charge of administration and his duties include monitoring the work progress and day to day site operation. DW3 remembered that DW1 had told him that DW3's company might have exceeded the permissible noise level on the night of 1 Dec 04. DW3 disagreed because the workers' time sheets and the records of the bore piles installation showed otherwise. He said that the casting work had stopped at about 6 pm while the boring work ie, the drilling of holes had stopped at about 8 pm. He explained that Exhs. D9 and D10 showed that some of his workers had left the construction site by 7 pm while others had left by 10 pm. Further, the workers of his company would be conveyed to and from the construction site to their quarters via the company's transports. He marked the location where the workers would congregate to board their transports home on Exhs. D1 (marked with a blue 'x').

Evidence of Leong Chee Chow (DW4)

36. DW4 was the Accounts Manager of M/s Holcim Singapore Pte Ltd, the company that supplies the concrete to the Sinaran Drive construction site. He was called to introduce the eleven delivery orders for concrete to the Sinaran Drive construction site on 1 Dec 04 (collectively marked as Exh. D12). He explained that the words 'TM' refers the grade of concrete. The unit '20 mm' refers to the aggregate of the stone inside the concrete. The 4-hour retardation period refers to the how long the concrete can last before it hardens; and that the 4-hour period runs from the time the concrete leaves the batching plant. He also

confirmed that from the delivery orders, on 1 Dec 04, the last batch of concrete arrived at the Sinaran Drive construction site at about 4.45 pm.

Evidence of Tan Guat Ling (DW5)

37. DW5 was an Administrative Assistant with the defendant company. He confirmed that sometime in Oct 2005, he had collected the time sheets in Exh. D6 from the defendant company's Human Resource Department and handed them to the defendant's counsel. He also confirmed that these time sheets in Exh. D6 was the complete set.

Evidence of Desmond Tian Boon Kwang (DW6)

38. DW6 was the representative of M/s Lee Hung Scientific Pte Ltd, the company that calibrated the noise meter which the defendant company had set up at No. 41 Sinaran Drive. He also confirmed that Exh. D13 was the calibration certificate issued by his company. From Exh. D13, he confirmed that the noise meter was calibrated on 23 Jun 05.

39. DW6 also testified that his company also sells the Quest Technologies Sound Level Meters or known as the Quest 500 noise meter. He explained that the Quest 500 is a Type 1 noise meter. Therefore it has an accuracy of ± 1 dB. He said that the accuracy of the noise meter can be affected by external factors, and that the specification of ± 1 dB must fall within the meter's operating range eg, temperature and humidity. In accordance with the manufacturer's specification, when his company does the calibration of noise meters, the ambient temperature and the relative humidity are recorded.

40. DW6 testified that the operating range of the Quest 500 noise meter, the temperature must be between -10°C to 50°C , and the relative humidity should be around 0% to 95%. Taking these into account, he confirmed that the Quest 500 would be operating within its operating environment. And since it was operating within its operating environment, its tolerance level would be ± 1 dB. He also agreed that the said noise meter would not record noise level more than 1 dB above the actual reading in a normal field condition.

41. At the close of the case for the defence, parties tendered written submissions, and the prosecution also tendered a reply to the defence's closing submission.

The Findings of the Court

42. Having considered the evidence adduced in the course of the trial, and the submissions of both parties, I am satisfied that the two charges have been proven beyond reasonable doubt. I will now explain the reasons why.

Framework of the Control of Noise at Construction Sites Regulations

43. In the Environmental Pollution Control (Control of Noise at Construction Sites) Regulations, Regulation 3 provides that the owner or occupier of any construction site shall ensure that the level of noise emitted from his construction site shall not exceed the permissible noise levels. In the present case before me, the permissible noise level is set out in the Second Schedule of the Regulations. In the Second Schedule, under Part II, the maximum permissible noise level for the Sinaran Drive construction site for the period between 10 pm to 7 am is 55 dBA. Regulation 3(1)(b) also makes a specific reference to

“construction work” when referring to the maximum permissible noise levels. Although construction work is not defined in the Regulations, but by applying Regulation 2(a), (b), (c) and (d), I am of the opinion that “construction work” under the Regulations would include works bearing the descriptions as described in Regulation 2(a) to (d). Therefore, the noise being generated must be in connection to such works, and not to other sources of noise.

44. Regulation 4 stipulates that the owner or occupier of any construction site may be required to (a) set up an equipment to measure and record the level of noise emitted from his construction site, and (b) to submit the records of the noise level readings including all relevant facts which may influence the values of the noise level readings. Regulation 3(2)(b) stipulates that the noise meter must be set up one metre away from the outside of any affected building.

45. A breach of Regulations 3 or 4 constitutes an offence under the said Regulations. This is stipulated in Regulation 5.

46. In the Third Schedule, adjustments to the value of the permissible noise levels is provided for. This adjusted value is obtained by adding a correction factor corresponding to the difference between the maximum permissible noise level in the First and Second Schedules and the background noise level. The Third Schedule sets out the corresponding correction factors to be applied.

Location of the Noise Meter

47. It is not in dispute that the relevant noise meter was not placed in accordance with the words in regulation 3(2)(b). In this present case, the noise meter was set up about 2 to 3 metres away from the side of the nearest affected building which was No 41 Sinaran Drive. As regulation 3(2)(b) uses the word “shall”, there is an issue on whether the requirement that the noise meter be set up 1 metre from the nearest affected building is mandatory or directory.

48 The issue whether regulation 3(2)(b) is mandatory or directory is a question of legislative intent. The rules of interpretation state that when a statute uses the word ‘shall’, prima facie it is mandatory but the court may ascertain the real intention of the legislature by carefully attending to the whole scope of the statute, and the court may consider, inter alia, the nature and the design of the statute, and the consequences which would follow from construing it one way or the other: State of UP v Babu Ram AIR 1961 SC 751 at page 765.

49 The Control of Noise at Construction Sites regulations are designed to prevent excessive noise emanating from construction sites in the course of construction work. The offence created is one of exceeding the prescribed permissible noise level. That is why the regulations provide for different noise limits for different times of the day and night, and the noise limits also vary according to the sensitivity of the areas to noise. For example, construction activities in the vicinity of noise-sensitive buildings such as hospitals, homes for the aged sick, and schools have to meet more stringent noise limits. It is clear that the approach taken by the regulations is one of pragmatism, wherein it balances the need for new developments with the interest of residents in enjoying peace and quiet.

50. Regulation 3(2)(b) is designed to ensure the accuracy of the measurement of the noise level emanating from any construction site. As the mischief to be prevented is one of

excessive noise which affect the public, this is why the noise meter is required to be placed 1 metre from the nearest affected building. I agree with the prosecution's submission that if the provision is to be read in a mandatory sense, NEA would not be able to record noise levels when the circumstance is such that the location of the construction site vis-à-vis the nearest affected building makes it impossible to set up a noise meter 1 metre away from the affected building. For example, the owner of the nearest affected building might withhold his consent to the noise meter being set up, as is seen in this case before me. This is a real practical difficulty and not an abstract proposition. As such, the objective of the regulations would be defeated if the word "shall" is read in a mandatory sense, as the NEA would have been precluded from monitoring certain construction sites on the basis of their locations.

51. In the present case before me, the defendant company had initially placed the noise meter about 5 to 6 metres in front of No. 41 Sinaran Drive (the nearest affected building), rather than the 1 metre distance prescribed in the regulations. The defendant had informed NEA that they had difficulty in obtaining permission from the owner of No. 41 Sinaran Drive to set up the noise meter 1 metre in front of the premises. After some discussions, they finally agreed to hang the noise meter from a tree located within the compound of the premises. This tree was about 2 to 3 metres away from the side of the building and 1 metre away from the front of the building. This location did not give a disadvantage to the defendant. In fact, it affords an advantage to the defendant in that the noise meter is further away from the boundary of the construction site. I am therefore satisfied that the location of the noise meter is in accordance to the purpose and intent of regulation 3(2)(b).

Accuracy of the Quest 500 Noise Meter

(i) The Tolerance of the Noise Meter

52. The defendant tried to throw doubt on the accuracy of the readings recorded by the defendant's noise meter by highlighting the inherent inaccuracies of the noise meter. Firstly, the defendant contended that the noise meter, being a Type 1 meter, has an inherent inaccuracy of ± 1 dBA, which is its tolerance level. Therefore one should add ± 1 dBA to the 1-hour LEQ readings to reflect the actual noise level at any given time.

53. I find the defendant's submissions on this point wholly misconceived. A Type 1 noise meter has a tolerance of ± 1 dBA when it is operating within its operating ranges. It does not mean that the noise meter is inherently inaccurate as the defendant wants to court to believe. It means that when operating within its operating ranges, the Type 1 noise meter would not measure a reading outside its tolerance. It was revealed that the defendant's noise meter has an operating temperature range of $-10^{\circ}\text{Celsius}$ to 50°Celsius and the humidity range of between zero to 95%. I do not think that anyone will dispute that the temperature and humidity levels in Singapore whether during the day or at night falls within the operating temperature and humidity ranges of the defendant's noise meter. Therefore on both nights of 1 Dec 04 and 10 Mar 05, the noise meter was operating well within its operating ranges, and as such it would not exceed its tolerance. The defendant has not adduced expert evidence to show that the noise meter was not functioning properly on the two nights in question. In fact the evidence before me strongly suggests that the noise meter was functioning properly at the relevant times.

54. I accept the prosecution submission that the noise meter tolerance is in relation to spot measurements. Essentially this means that at any point of time, the noise level recorded

would be ± 1 dBA of the actual noise level. The 1-hour LEQ measurement is the average of the spot measurements taken over a one hour period. Thus, this average reading would have an even smaller margin of error. This means that the one hour noise level would not exceed the actual noise level by 1 dBA. Instead it would record a noise level which is very close to the actual sound level. This is the purpose of averaging out noise readings, which is to reduce the effect of isolated errant readings. This is why the maximum permissible level is taken in the context of the 1-hour LEQ reading and not as a spot measurement.

(ii) The Amplifying Effect

55. The defendant also went to great length to submit that the readings recorded by the defendant's noise meter are not accurate because of the amplification of the noise due to the reflective nature of the box in which it was contained. Again, I find that this contention to be without basis. If indeed the box has an amplifying effect, then the amplifying effect would affect all noise recorded by the noise meter, and not just on the nights of 1 Dec 04 and 10 Mar 05 between 10 pm to 11 pm. This means that all the measurements recorded by this noise meter from day one are amplified and thus inaccurate. This would include the background noise. Yet, the readings of the background noises recorded by the defendant's noise meter did not differ in any significant manner from the background noises recorded by PW1 when he used his portable noise meter on 13 Jan 05. This is a clear indication that there was no such amplifying effect as alleged by the defendant.

56. The defendant did not adduce evidence to show the material used to construct the box, and if it did indeed have an amplifying effect and what these amplified values are. It would have been easy for them to adduce evidence on these questions as the noise meter and the box are owned by them and at all material times in their control and possession. Instead they merely cast a bare allegation and left it at that.

57. In contrast, PW3 had confirmed that the sensor of the noise meter was located at one of the openings found in the box and was pointed facing the construction site. This was not rebutted by the defendant in any way. D14 at page 86 stated that the defendant's noise meter is most effective when the sensor is pointed directly at the source of the noise. Therefore, on the evidence before me, I am satisfied that there is no amplifying effect created by the box, and that the noise meter was reading the noise which comes from the Sinaran Drive construction site.

Other Sources of Noise / Measurement of the Background Noise

58. Much was said on the method of obtaining the background noise level in the vicinity of the Sinaran Drive construction site. The defendant submitted that this was important as the Third Schedule provided for the application of a correcting factor to adjust the value of the maximum permissible noise level. The defendant's argument goes along these lines – that the regulations provides that if there are other sources of noise affecting the measurement of the level of noise emitted from a construction site, the maximum permissible limit set out in the Second Schedule shall be adjusted in accordance with the Third Schedule. Therefore, the Third Schedule requires that the background noise level should be ascertained before the appropriate adjustments can be factored in to determine the maximum permissible limit. Reading the Regulations, I again find this argument to be misconceived.

59. Regulation 3(3) provides that if there are other sources of noise affecting the measurement of the level of noise emitted from a construction site, the maximum permissible noise levels set out in the First and Second Schedules shall be adjusted in accordance with the Third Schedule and the adjusted value shall be taken as the maximum permissible noise level. Regulation 4(b) provides that the Director may require the owner or occupier of any construction site to submit the records of the noise level readings **including all relevant facts which may influence the values of the noise level readings** (*emphasis mine*). Reading these two regulations together, it is clear that the adjustments provided for in the Third Schedule is not applicable in every case. The framework of the Regulations is such that the owner or occupier of a construction site, when submitting the records of the noise level readings, must include in their submission all relevant facts which may have influenced the values recorded by the noise meter, such as the presence of other sources of noise at the particular times in question. The duty to report the presence of other noise sources falls squarely on the owner or occupier of the construction site. This is consistent with the policy embedded within the framework of the parent Act and the Regulations of imposing a self-monitoring regime on the part of the owners of construction sites in controlling pollution. See for example sections 10 and 37 of the parent Act.

60. So, in the event the owner or occupier of a construction site submits these relevant facts, by virtue of regulation 3(3), then and only then would the provision in the Third Schedule come into play. The background noise level should then be ascertained and the adjustments to the maximum permissible limit made in accordance to the Third Schedule. Thus the owner or occupier has the onus to disclose the sources of noise that might affect the ambience noise level at the vicinity of his construction site. If the owner or occupier fails to submit all relevant facts which might have influenced the noise level readings, then the maximum permissible limit to be applied would be that as prescribed in the First and Second Schedules. I am sure that during the prescribed values of the permissible limits for the various types of affected buildings and for the different times of the day and night in the Third Schedule, would have addressed all the issues raised during the course of the trial.

61. In the present case before me, the defendant did not submit any relevant facts in connection to 1 Dec 04 and 10 Mar 05 incidents. In fact, in the course of the trial, and in relation to the first charge, the defendant merely adduced evidence to show that there had been no construction work being done after 10 pm during the night of 1 Dec 04, which within the framework of the Regulations, is irrelevant. Similarly, it is not relevant whether there had been complaints lodged by a member of the public or not. Further, the defendant cannot now at the trial raise the suggestion that the high readings could have been due to the noise generated by vehicles leaving the construction site after 10 pm. In any case, on the evidence before me, I do not accept that the noise readings for the night of 1 Dec 04 between 10 pm to 11 pm was due to this. Looking at the noise charts (Exh P19), I am satisfied and I accept the prosecution's submission that if there had been engine noises generated by these vehicles, they could not have affected the noise readings continuously for 20 minutes. If at all, they would have only caused a surge in the reading for five minutes or so. The readings are more consistent with on-going construction work at the construction site. It seems to me that the defendant's explanation is an afterthought. As for the second charge, the defendant did not dispute that work had been going on but that the noise emitted was not excessive, or if it was excessive, the *de minimis* principle applies.

62. Be that as it may, even if the defendant was correct in his contention that in all instances, the background noise level must be ascertained and the correcting factor added to give the

adjusted maximum permissible limit, I cannot accept the defendant's method of ascertaining the background noise level. Instead, I accept and adopt the prosecution's method which is practical, and neither unscientific nor arbitrary. Applying the prosecution's method of reading the noise charts, the background noise level for the vicinity of the Sinaran Drive construction site was ascertained to be between 50 to 52 dBA. In fact, these values were corroborated by the separate readings taken by PW1 using a portable Type 1 noise meter which also recorded similar values. Therefore, taking the value of the background noise levels as 50 dBA or 52 dBA, and adding the correcting factors of 1 dBA and/or 2 dBA, the adjusted maximum permissible limit would be 56 dBA or 57 dBA. The 1-hour LEQ noise level recorded from the defendant's construction site on 1 Dec 04 between 10 pm to 11 pm was 59.8 dBA, which is still higher than the two adjusted values. Similarly for the night of 10 Mar 05, between 10 pm to 11 pm, where the noise level from the construction site was recorded at 58.3 dBA. In any event, as I have earlier stated, regulation 3(3) and the Third Schedule do not apply. Therefore I am satisfied that the maximum permissible limit applicable in relation to both charges is 55 dBA.

De Minimis Principle

63. In respect of the second charge, the defendant submitted that even if the noise level on the 10 Mar 05 between 10 pm to 11 pm was excessive, the law is not concerned with trivial matters and on the principle of *de minimis non curat lex*, the defendant company should not be convicted. In support of this contention, the defendant adduced evidence of the range of noise levels which is not discernible to the human ear, and that no harm had been caused to anyone.

64. My response to this submission is as follows. Parliament has deliberately made it an offence for any owner or occupier of a construction site to exceed the maximum permissible limit prescribed in the regulations. It would lead to an absurd situation if the *de minimis* principle can be applied to exempt an offender from being convicted of an act which has been made an offence by Parliament. Therefore, I am of the opinion that this principle does not apply.

Antecedents

65. I was informed that the defendant company had been previously convicted on 8 occasions, the last previous conviction being on 14 Oct 03 where it was fined \$9,000/-. The defendant company could only confirm the conviction on 14 Oct 03 and the fine of \$9,000/-. As such, I would only consider this conviction in assessing the appropriate sentence. The prosecution declined my invitation to submit on sentence.

Mitigation

66. The defendant informed that work at the Sinaran Drive construction site is still on-going and estimated to be completed some time in 2006. They have been experiencing difficult ground conditions in the form of unexpected rock formations which necessitated a prolonged structural construction process. This process which included the installation of the skeletal structures would require the use of heavy machineries and other heavy equipment. The defendant had also been very careful to ensure that the comfort of the residents is not disturbed. The defendant has expended great effort and taken great care towards preventing these offences. The defendant highlighted the practical difficulty it faces as it runs many

construction sites and hires many workers. Taking into account these constraints, the defendant's efforts towards managing pollution control is very good. Finally, the defendant submitted that the harm caused in respect of the low levels of excessive noise is insignificant.

Sentence

67. Regulation 5(a) provides that on a second or subsequent conviction, the fine shall not exceed \$20,000/-.

68. As Singapore becomes more built up, construction activities are increasingly located nearer to existing residential estates. With construction sites now located increasingly closer to residential areas, contractors must actively ensure that their site activities do not give rise to public health problems. A construction site, if not carefully managed in terms of its pollution control, can become a source of nuisance and even public health hazards to residents and workers living and working nearby. As such, contractors must therefore take appropriate steps to minimise nuisance to residents. An important facet of the management of pollution control is the enforcement action by the NEA. It is also pertinent to note that the Minister for the Environment, Associate Professor Yaacob Ibrahim, at the Parliament sitting on 17 Oct 2005 had stated that in 2004, 95% complaints of construction noise came from residential buildings near construction sites. Noise pollution from construction sites is certainly not a trivial matter.

69. Therefore, a clear signal must be send out to reflect the seriousness of complying with the regulations. Otherwise, construction companies, in their desire to complete their construction projects early or on time, would just ignore the laws on pollution control in order to avoid the much heavier penalty imposed by the developer for late delivery of the project, which would be much more severe than the fine which could possibly be imposed under the pollution control laws.

70. Thus, having regard to all the circumstances before me, I am of the opinion that the appropriate sentence to be meted out to the defendant company in this case would be a fine of \$12,000/- in respect of each charge.

71. The defendant being dissatisfied with the conviction and sentence, has appealed against both conviction and sentence.