Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation

2.2.4 This Regulation takes effect on 1 June 2015 and requires Non-road Mobile Machinery ("NRMM"), except those exempted, to comply with the prescribed emission standards. From 1 September 2015, all regulated machines sold or leased for use in Hong Kong must be approved or exempted with a proper label in a prescribed format issued by EPD. Starting from 1 December 2015, only approved or exempted NRMMs with a proper label are allowed to be used in specified activities and locations including construction sites, container terminals and back up facilities, restricted areas of the airport, designated waste disposal facilities and specified processes.

Asbestos Containing Materials ("ACMs")

2.2.5 The owner of premises which contain or may reasonably be suspected of containing ACMs shall engage a Registered Asbestos Consultant ("RAC") to prepare an Asbestos Investigation Report ("AIR"). If any ACM is found, an Asbestos Abatement Plan ("AAP") shall be submitted to EPD for approval. EPD shall be notified in writing at least 28 days before the commencement of any asbestos abatement work.

2.2.6 For Removal of ACMs, a Registered Asbestos Contractor shall be engaged to remove the ACM in accordance with the APCO and the approved AAP under a RAC's supervision as required. Depending upon the type of work to be carried out, a RAC may need to be appointed to supervise. ~~audit and air monitor the asbestos abatement work. After completion of the asbestos abatement work, a summary report to be prepared by the RAC shall be submitted to EPD for record and demolition work can then commence.~~

Air Pollution Control (Furnaces, Ovens and Chimneys) (Installation and Alteration) Regulations

2.2.7 Enacted under Section 43 of the APCO, the *Air Pollution Control (Furnaces, Ovens and Chimneys) (Installation and Alteration) Regulations* stipulate that a prior approval from EPD will be required if the total fuel consumption capacity of any fuel-burning equipment or its chimney on premises to be installed or altered exceeds (a) 25L of conventional liquid fuel per hour; or (b) 30kg of conventional solid fuel per hour; or (c) 1,150MJ of any gaseous fuel per hour.

Hong Kong Planning Standards and Guidelines ("HKPSG")

2.2.8 The minimum buffer distances required between different types of roads and active open spaces are recommended in Chapter 9 Environment of HKPSG and are summarised in ***Table 2.2*** for ease of reference. For chimney, a buffer distance of 200m is recommended in Chapter 9 of HKPSG.

Table 2.2: HKPSG Minimum Setback Distances

POLLUTION SOURCE	TYPE OF ROAD	BUFFER DISTANCE	PERMITTED USES
Road and Highways	Trunk Road and Primary Distributor	>20m	Active and passive recreation use
		3 - 20m	Passive recreational use
		<3m	Amenity areas
	District Distributor	>10m	Active and passive recreational use
		<10m	Passive recreational uses
	Local Distributor	>5m	Active and passive recreational use
		<5m	Passive recreational use
	Under Flyovers	-	Passive recreational use

Source: Adapted from Table 3.1 of Chapter 9 Environment of HKPSG.

immediately before, during and immediately after the operation so as to maintain the entire surface wet.

All demolished items (including trees, shrubs, vegetation, boulders, poles, pillars, structures, debris, rubbish and other items arising from site clearance) that may dislodge dust particles shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition.

Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.

Vehicle washing facilities including a high pressure water jet shall be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point shall be paved with concrete, bituminous materials or hardcore.

Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit.

Spray water on the surface of façade before and during grinding work.

Equip vacuum cleaner on grinder for façade grinding work as far as practicable.

Main haul road shall be sprayed with water so as to maintain the entire road surface wet. Imposition of speed controls for vehicles on site haul roads and confine haulage and delivery vehicles to designated roadways inside the site.

The portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit shall be kept clear of dusty materials.

Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.

Every stock of more than 20 bags of cement or dry Pulverised Fuel Ash ("PFA") should be covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides.

2.4.7 In addition, the EPD's *Recommended Pollution Control Clause ("RPCC") for Construction Contract* in COP should be incorporated in the relevant works contract. The RPCC are generally good engineering practice to minimize inconvenience and environmental nuisance to nearby residents and other sensitive receivers. The general requirements as summarised as follows:

The Contractor shall observe and comply with the APCO and its subsidiary regulations, particularly the *Air Pollution Control (Open Burning) Regulation* and *Air Pollution Control (Construction Dust) Regulation* and *Air Pollution Control (Smoke) Regulation*.

The Contractor shall undertake at all times to prevent dust nuisance and smoke as a result of his activities.

The Contractor shall ensure that there will be adequate water supply / storage for dust suppression.

The Contractor shall devise, arrange methods of working and carrying out the works in such a manner as to minimise dust impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.

For better smoke control, the Contractor shall not use diesel hammer for percussive piling.

Before commencement of any work, the Engineer may require the methods of working, plant, equipment and air pollution control system to be used on the site to be made available for inspection and approval to ensure that they are suitable for the project.

2.4.8 There is a temporary structure (i.e. a small village house) within the Site which will not be demolished during construction phase. ~~The small village house is currently inaccessible. Hence, a RAC will be engaged during the detailed design stage to prepare an AIR. If any ACM is found, an~~

~~AAP shall be submitted to EPD for approval. EPD shall be notified in writing at least 28 days before the commencement of any asbestos abatement work~~. Therefore, it is no advance effect on the whole environment Protection for the Air factor.

2.4.9 For removal of ACMs, a Registered Asbestos Contractor shall be engaged to remove the ACM in accordance with the APCO and approved AAP under a RAC's supervision as required. Depending upon the type of work to be carried out, a RAC may need to be appointed to supervise, audit and air- monitor the asbestos abatement work. After completion of the asbestos abatement work, a summary report to be prepared by the RAC shall be submitted to EPD for record. ~~and demolition work can then commence. With the implementation of the aforementioned procedure and measures, no adverse impact from ACMs is anticipated.~~

2.4.10 For the emergency generator, the chimney design shall comply with the *Air Pollution Control (Furnaces, Ovens and Chimneys) (Installation and Alteration) Regulations* as mentioned in ***paragraph 2.2.7***.

Operation Phase

Industrial Emission

2.4.11 Site visits were conducted on 23 March 2018, 19 September 2018 and 18 August 2021 to identify the potential air pollution sources in the vicinity of the Site. A cement works was located to the north of the Site. The cement works is located around 220m from the air sensitive use of the Site, which can satisfy the 200m buffer distance between industrial chimneys and air sensitive uses recommended in Chapter 9 of the HKPSG. Hence, no adverse air quality impact from industrial emission on the Centre is anticipated. The location of the cement works is shown on ***Figure 2-2.***

2.4.12 As advised by the Applicant, only three to five forklifts will be used within the Centre. As the forklifts will comply the emission standards of the *Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation*. The air quality impact from the forklifts is considered insignificant. No adverse air quality impact from the operation of the Centre on the surrounding air sensitive uses is therefore anticipated.

Vehicular Emission

2.4.13 Man Kam To Road and Lo Wu Station Road are the major road near the Site as shown on ***Figure 2-3***. With reference to the *Annual Traffic Census 2021* published by the Transport Department ("TD"), Man Kam To Road is classified as a Rural Road whilst there is no relevant information for Lo Wu Station Road. By considering the nature of Lo Wu Station Road, it is classified as a Rural Road. There is no specific buffer distance requirement recommended in Table 3.1, Chapter 9 of the HKPSG. Hence, the minimum buffer distance of 5m between air sensitive uses and local road is adopted for the Centre.

2.4.14 As illustrated on ***Figure 2-3***, majority of the Site can satisfy the buffer distance of 5m between the roads and the Site. There is no air sensitive use within the 5m buffer distance between the roads and the Site. In order to avoid adverse air quality impact from traffic emission, a buffer zone is recommended for the Proposed Development with the following requirements:

No fresh air intake / openable window of air sensitive uses shall be located within the buffer zone.

Any air sensitive uses within buffer zone shall rely on fresh air intake / openable window located out of the buffer zone for ventilation.

2.4.15 With the provision of the buffer zone, the buffer distances recommended in HKPSG will be satisfied. Therefore, no adverse air quality impact on the Site from traffic emission is anticipated.

2.4.16 The engines of the vehicles will be switched off during loading / unloading within the Centre. Besides, Man Kam To Road and Lo Wu Station Road will still operate with ample capacity with the Proposed Development as per Section 4.8 of the TIA Report. The additional traffic trips

3 NOISE

3.1 Environmental Legislation and Standards

Noise Control Ordinance (Cap. 400)

3.1.1 The main piece of legislation controlling environmental noise impact is the *Noise Control Ordinance* ("NCO"). The NCO enables regulations and Technical Memoranda ("TMs") to be enacted, which introduces detailed control criteria, measurement procedures and other technical matters.

3.1.2 The Site does not fall within any Designated Area ("DA") in accordance with EPD's Plan No. EPD/AN/NT-01 and EPD/AN/NT-01A for Yuen Long, Tin Shui Wai, Mai Po, Shek Kong and Kwu Tung; as well as Plan No. EPD/AN/NT-02 and EPD/AN/NT-02A for Tai Po, Fanling, Sheung Shui and Sha Tau Kok. Therefore, the *Technical Memorandum on Noise from Construction Work in Designated Area* ("DA-TM") is not applicable.

3.1.3 Construction noise during noise control restricted hours is governed under the following Technical Memoranda:

- Technical Memorandum on Noise from Percussive Piling ("PP-TM").
- Technical Memorandum on Noise from Construction Work other than Percussive Piling ("GW-TM").
- Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites ("IND-TM").

3.1.4 In addition, the following requirements are given under the NCO:

- Hand-held breakers having a mass of above 10kg and any air compressor capable of supplying compressed air at 500kPa or above must be fitted with a Noise Emission Label issued under the *Noise Control (Hand Held Percussive Breakers) Regulation and Noise Control (Air Compressors) Regulation* of NCO.
- Construction Noise Permit ("CNP") must be applied by the Contractor from EPD for any percussive piling at any time or any other construction activities conducted within restricted hours (for all days 7pm to 7am the next day and at all times on Public Holidays or Sundays) as defined in NCO.

3.1.5 There is no statutory control for noise arising from construction activities (other than percussive pilling) during normal working hours (7am to 7pm from Monday to Saturday, not including general holidays). Nevertheless, *Professional Persons Environmental Consultative Committee Practice Note* ProPECC PN1/24 *Noise from Construction Activities – Non-statutory Controls* ("ProPECC PN1/24") recommends the noise criteria as shown in ***Table 3.1*** and guideline to minimise the potential construction noise impact during normal working hours.

Table 3.1: Construction Noise Criteria for Non-Restricted Hours

NOISE SENSITIVE USE	$L_{EQ(30\ MIN)}$ NOISE CRITERIA BETWEEN 0700 AND 1900 ON ANY DAY NOT BEING A SUNDAY OR GENERAL HOLIDAY
Dwellings	75 dB(A)
School	70 dB(A) (or 65 dB(A) during examination)

3.1.6 For fixed plant noise during operation phase, the requirements of IND-TM shall be complied with. Table 2 of IND-TM stipulates the day, evening and night time Acceptable Noise Levels ("ANLs") for Noise Sensitive Receivers ("NSRs") according to the corresponding Area Sensitive

3.2 Construction Noise Impact

3.2.1 Various construction activities such as excavation, stockpiling, earth moving, filling activities, reinstatement works and etc. will be the key noise sources generated during the construction phase. In particular, the use of PME and the vehicle movement within the Site are the major noise sources.

3.2.2 Construction shall be carried out during non-restricted hours as far as practicable. The mitigation measures recommended in ProPECC PN1/24 should be implemented where applicable. In addition, the following measures and on-site practice are recommended in order to minimise the potential construction noise impacts during daytime:

Quiet PME and construction method should be adopted as far as practicable.

The Contractor shall devise and execute working methods to minimise the noise impacts on the surrounding sensitive uses, and provide experienced personnel with suitable training to ensure that those methods are implemented.

Switch off idling equipment.

Regular maintenance of equipment.

Fit muffler or silencer for equipment.

Noisy equipment and noisy activities should be located as far away from the NSRs as is practical.

Use quiet construction method, e.g. use of saw-cut or hydraulic crusher instead of excavator-mounted percussive breaker.

PME should be kept to a minimum and the parallel use of noisy equipment / machineries should be avoided.

Erect noise barriers or noise enclosure for the PME if appropriate.

Implement good house-keeping and provide regular maintenance to the PME.

Spot check resultant noise levels at nearby NSRs.

3.2.3 If construction work involving the use of PME will be required during restricted hours, a CNP shall be applied for under the NCO. The noise criteria and assessment procedures for obtaining a CNP are specified in GW-TM.

3.2.4 In addition, the EPD's RPCC for Construction Contract in COP should be incorporated in the relevant works contract. The RPCC are generally good engineering practice to minimize inconvenience and environmental nuisance to nearby residents and other sensitive receivers. The general requirements as summarised as follows:

The Contractor shall observe and comply with the *NCO* and its subsidiary regulation.

The Contractor shall ensure that all plant and equipment to be used on the Site are properly maintained in good operating condition and noisy construction activities shall be effectively sound-reduced by means of silencers, mufflers, acoustic linings and shields, acoustic sheds or screen or other means, to avoid disturbance to nearby noise sensitive receivers.

For carrying out any construction work other than percussive piling during the time period from 0700 to 1900 hours on any day not being a general holiday (including Sundays), the Contractor shall comply with the following requirements.

- The noise level measured at 1m from most affected external façade of the nearby noise sensitive receivers from the construction works alone during any 30-minute period shall not exceed an equivalent sound level ("L_{eq}") of 75dB(A).
- The noise level measured at 1m from most affected external façade of the nearby schools from the construction works alone during any 30-minute period shall not exceed L_{eq} of 70dB(A) [65dB(A) during school examination period]. The Contractor shall liaise

NSR	PREDICTED NOISE LEVEL, dB(A)			NOISE CRITERIA, dB(A)		
	Day	Evening	Night	Day	Evening	Night
IN11	48	43	32			
IN12	49	44	32			
IN13	51	46	35			
IN14	47	42	31			
IN15	54	49	37	55	49	44

Mechanical and Electrical (M&E) Equipment

3.3.37 As mentioned in ***paragraphs 3.3.10 - 3.3.11***, 4 sets (in total of 19) of condensers were taken into account in this assessment.

3.3.38 They are distributed on the roof top of Cold Storage Blocks 1 and 2. Seven condensers and six condensers are located on Cold Storage Block 1 (SW) and Block 1 (NE), respectively, while another six condensers are located on the Block 2, as shown on ***Figure 3-5***.

3.3.39 According to the information provided by the Project M&E Consultant, the SWL of the condenser, 76 dB(A) shown in ***Appendix D***, has been adopted in the calculation.

3.3.40 In order to minimise the noise impact, noise enclosure should be installed for the condenser.

3.3.41 According to the *Good Practices on Ventilation System Noise Control* published by EPD, a complete acoustic enclosure (minimum surface density of 10kg/m^2) with silencer for condenser with opening could provide a noise reduction of 20dB(A) or more.

3.3.42 In order to further minimise the noise impact, it is suggested that the openings of enclosure of Block 1 and Block 2 should face Man Kam To Road and located as far as practicable from the NSRs as shown on ***Figure 3-5***.

3.3.43 Regarding the screening effect, a 10 dB(A) reduction was adopted for NSRs without direct line-of-sight to the openings. Taking a conservative approach to estimate the above mentioned measures, a total of 10 dB(A) reduction as screening effect was adopted for all NSRs.

3.3.44 The noise levels from M&E equipment were thus calculated as shown in ***Appendix F*** and summarised in ***Table 3.10***.

Table 3.10: Predicted Noise Levels from M&E Equipment

NSR	PREDICTED NOISE LEVEL, dB(A)	NOISE CRITERIA, dB(A)		
	Day / Evening / Night	Day	Evening	Night
IN1	36			
IN2	30			
IN3	30	55	49	44
IN4	30			
IN5	29			