

**APPENDIX 4E
Construction Noise Calculation for
Mitigated Scenarios 1 and 2**

Construction Plant Inventory (Mitigated Scenario 1)

Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	General									
1-1	Site Mobilization - Excavation	Air Compressor, air flow > 10m ³ /min and < 30m ³ /min	EPD-08976	98	1	60%	Enclosure	-10	86	102
		Breaker, excavator mounted (hydraulic)	(Ref: Sandhurst - XT-200) ^[4]	110	1	50%	Barrier	-5	102	
		Excavator/loader, wheeled/tracked	EPD-08966	91	1	70%	Barrier	-5	84	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	50%	Enclosure	-10	80	
	Site Mobilization - Formation of works site	Concrete lorry mixer	CNP 044	109	1	40%	Barrier	-5	100	101
		Poker, vibratory, hand-held	EPD/PME/19	102	1	40%	Barrier	-5	93	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	70%	Enclosure	-10	81	
	Site Mobilization - Mobilization of construction plants and materials	Crane, mobile	EPD-08588	93	1	45%			90	98
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	50%	Barrier	-5	97	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	50%	Enclosure	-10	80	

Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	<u>Cavern and Tunnel Construction</u>									
2-1	Open-cut Construction of Tunnel and Tunnel Portal	Excavator/loader, wheeled/tracked	EPD-08966	91	1	70%	Barrier	-5	84	107
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	70%	Barrier	-5	98	
		Piling, vibrating hammer	[2]	115	1	40%	Barrier	-5	106	
2-2	Excavation of Access Tunnel	Rock drill, crawler mounted (hydraulic)	CNP 182	123	1	75%	Inside Cavern	-20	102	103
		Breaker, excavator mounted (hydraulic)	(Ref: Sandhurst - XT-200) ^[4]	110	1	80%	Inside Cavern	-20	89	
		Water pump (electric)	CNP 281	88	2	80%	Inside Cavern	-20	70	
		Concrete pump, stationary/lorry mounted	CNP 047	109	1	60%	Inside Cavern	-20	87	
		Concrete lorry mixer	CNP 044	109	1	60%	Inside Cavern	-20	87	
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	70%	Inside Cavern	-20	83	
		Ventilation fan	CNP 241	108	2	100%	Inside Cavern	-20	91	
		Conveyor Belt	CNP 041	90	1	100%	Inside Cavern	-20	70	
2-3	Excavation of Cavern	Rock drill, crawler mounted (hydraulic)	CNP 182	123	1	75%	Inside Cavern	-20	102	103
		Breaker, excavator mounted (hydraulic)	(Ref: Sandhurst - XT-200) ^[4]	110	1	80%	Inside Cavern	-20	89	
		Water pump (electric)	CNP 281	88	2	80%	Inside Cavern	-20	70	
		Concrete pump, stationary/lorry mounted	CNP 047	109	1	60%	Inside Cavern	-20	87	
		Concrete lorry mixer	CNP 044	109	1	60%	Inside Cavern	-20	87	
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	70%	Inside Cavern	-20	83	
		Ventilation fan	CNP 241	108	2	100%	Inside Cavern	-20	91	
		Conveyor Belt	CNP 041	90	1	100%	Inside Cavern	-20	70	
2-4	Stone Crushing	Stone Crusher	[3]	115	1	50%	Enclosure	-10	102	102

Appendix 4E-1 Construction Noise Calculation for Mitigated Scenario 1 and 2

Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	Structural Works									
3-1	Anciliary Buildings at Tunnel Portal - Excavation	Air Compressor, air flow > 10m ³ /min and < 30m ³ /min	EPD-08976	98	1	60%	Enclosure	-10	86	99
		Breaker, hand-held, mass > 20kg and < 35kg	EPD-07425	103	1	50%	Barrier	-5	95	
		Excavator/loader, wheeled/tracked	EPD-08966	91	1	70%	Barrier	-5	84	
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	50%	Barrier	-5	97	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	50%	Enclosure	-10	80	
	Anciliary Buildings at Tunnel Portal - Foundation	Concrete lorry mixer	CNP 044	109	1	40%	Barrier	-5	100	107
		Piling, earth auger, auger	CNP 167	114	1	50%	Barrier	-5	106	
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	50%	Barrier	-5	97	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	70%	Enclosure	-10	81	
	Anciliary Buildings at Tunnel Portal - Structural Works	Crane, mobile	EPD-08588	93	1	45%			90	106
		Concrete lorry mixer	CNP 044	109	1	80%	Barrier	-5	103	
		Poker, vibratory, hand-held	EPD/PME/19	102	1	80%	Barrier	-5	96	
		Saw, circular, wood	CNP 201	108	1	60%	Barrier	-5	101	
		Bar bender and cutter (electric)	CNP 021	90	1	70%	Barrier	-5	83	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	50%	Enclosure	-10	80	
3-2	Structural Works for Relocated DHSRs and Pumping Stations	Crane, mobile	EPD-08588	93	1	70%	Inside Cavern	-20	71	91
		Concrete lorry mixer	CNP 044	109	1	80%	Inside Cavern	-20	88	
		Poker, vibratory, hand-held	EPD/PME/19	102	1	80%	Inside Cavern	-20	81	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	100%	Inside Cavern	-20	73	
		Saw, circular, wood	CNP 201	108	1	70%	Inside Cavern	-20	86	
		Bar bender and cutter (electric)	CNP 021	90	1	70%	Inside Cavern	-20	68	
Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	Mainlaying									
4-1	Fresh Water / Salt Water Mainlaying - Surface Breaking	Hand-held Percussive Breaker	EPD-08782	99	1	30%	Barrier	-5	89	89
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	30%	Enclosure	-10	78	
	Fresh Water / Salt Water Mainlaying - Excavation & Pipe laying	Excavator, mini-robot mounted	[2]	94	1	30%	Barrier	-5	84	84
	Fresh Water / Salt Water Mainlaying - Reinstatement (Group 1)	Concrete lorry mixer	CNP 044	109	1	30%	Barrier	-5	99	99
	Fresh Water / Salt Water Mainlaying - Reinstatement (Group 2)	Poker, vibratory, hand-held (electric)	[2]	102	1	30%	Barrier	-5	92	92
Generator, silenced, 75 dB(A) at 7 m		EPD-08978	93	1	30%	Enclosure	-10	78		

Appendix 4E-1 Construction Noise Calculation for Mitigated Scenario 1 and 2

Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	E&M Installation									
5-1	E&M Installation for Ancillary Buildings	Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	100%	Barrier	-5	100	102
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	50%	Barrier	-5	97	
5-2	E&M Installation for Relocated DHSRs and Pumping Stations	Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	100%	Inside Cavern	-20	85	89
		Ventilation fan	CNP 241	108	1	70%	Inside Cavern	-20	86	
		Generator, silenced, 75 dB(A) at 7 m	EPD-08978	93	1	70%	Inside Cavern	-20	71	

Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	Other Associated Works									
6-1	Slope, Landscaping Works and Reinstatement for Access Tunnel Portal	Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	70%	Barrier	-5	98	98

Notes:

[1] As only one group of PME would be operated simultaneously under same Works ID, only the activity with the highest total SWL under the same Works ID will be used for the construction noise assessment for each NSR


[2] Sound power levels of other commonly used PME (http://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)


[3] Quality Powered Mechanical Equipment (https://www.epd.gov.hk/cgi-bin/npq/qpme/search_gen.pl?lang=eng&st=sim&valid=Y)

[4] Reference for Sandhurst - XT-200 is made from EIA-235/2015 - Development of Anderson Road Quarry Site

Summary of Predicted Noise Levels from Construction (Mitigated Scenario 1)

NSR	Description	EIAO-TM Noise Criteria, dB(A)	Max. Predicted CNL, db(A)			
			Low Level	Mid Level	High Level	Overall
NSR 1	Block B, Peninsula Heights	75	71	71	69	71
NSR 2	Block 1, Meridian Hill	75	72	72	71	72
NSR 3	Chun Sing House, Tin Ma Court	75	66	65	63	66
NSR 4	Chun Wai House, Tin Ma Court	75	67	66	63	67
NSR 5	Grace Methodist Church Kindergarten	70/65	72	N/A	N/A	72
NSR 6	Wang King House, Tin Wang Court	75	72	65	61	72
NSR 7	Block 6, Tsui Chuk Garden	75	61	61	63	63
NSR 8	Baptist Rainbow Primary School	70/65	63	63	63	63
NSR 9	Pang Ching Court	75	64	58	54	64
NSR 10	Chung Yuen House, Chuk Yuen North Estate	75	68	59	54	68
NSR 11	Wah Yuen House, Chuk Yuen South Estate	75	69	66	61	69
NSR 12	Mui Yuen House, Chuk Yuen North Estate	75	65	58	54	65
NSR 13	Our Lady of Maryknoll Hospital	75	80	72	67	80
NSR 14	Our Lady's College	70/65	79	76	70	79
NSR 15	Evangel Children's Home	75	75	71	68	75
NSR 16	Wing Shing House	75	75	71	67	75
NSR 17	Ying Fuk Court	75	59	57	54	59
NSR 18	Diamond Hill Kwong Yum Home for the Aged	75	71	69	67	71
NSR 19	St. Bonaventure College and High School	70/65	77	71	66	77
NSR 20	Wu York Yu Health Centre	75	77	74	72	77
NSR 21	Twghs Wong Tai Sin Hospital	75	63	63	63	63
NSR 22	Ho Lap Primary School	70/65	66	65	64	66
NSR 23	Lok Shing House, Tsz Lok Estate	75	66	58	53	66
NSR 24	Fat Chong Temple	75	58	58	57	58
NSR 25	Wo Tin House	75	71	58	53	71
NSR 26	CCC Kei Tsz Primary School	70/65	64	63	62	64
NSR P1	Proposed Departmental Quarters for Customs & Excise Department	75	75	62	57	75

 Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 75 db(A) for residential / 70 db(A) for school during normal school days

 Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 65db(A) for school during examination period

Construction Noise Assessment (Mitigated Scenario 1)

NSR 4

Chun Wai House, Tin Ma Court

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	mPD Level: 57 (Low Level)																																																																																																																										
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General													Site Mobilization												Excavation at Access Tunnel Portal												Construction of Access Tunnel												Construction of Cavern												Stone Crushing (within Noise Enclosure)																																																																							
Structural Works													Ancillary Buildings at Tunnel Portal												Structural Works for Relocated DHSRs and Pumping Stations												Mainlaying Works												Fresh Water / Salt Water Mainlaying												E&M Installation												E&M Installation for Ancillary Buildings												E&M Installation for Relocated DHSRs and Pumping Stations												Other Associated Works												Slope, Landscaping Works and Reinstatement for Access Tunnel Portal												Predicted Noise Level during Daytime Period, dB(A)											

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	mPD Level: 105 (Mid Level)																																																																																																																										
										2022				2023				2024				2025				2026				2027																																																																																																						
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																																																				
General													Site Mobilization												Excavation at Access Tunnel Portal												Construction of Access Tunnel												Construction of Cavern												Stone Crushing (within Noise Enclosure)																																																																							
Structural Works													Ancillary Buildings at Tunnel Portal												Structural Works for Relocated DHSRs and Pumping Stations												Mainlaying Works												Fresh Water / Salt Water Mainlaying												E&M Installation												E&M Installation for Ancillary Buildings												E&M Installation for Relocated DHSRs and Pumping Stations												Other Associated Works												Slope, Landscaping Works and Reinstatement for Access Tunnel Portal												Predicted Noise Level during Daytime Period, dB(A)											

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	mPD Level: 153 (High Level)																																																																																																																										
										2022				2023				2024				2025				2026				2027																																																																																																						
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																																																				
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Structural Works													Ancillary Buildings at Tunnel Portal												Structural Works for Relocated DHSRs and Pumping Stations												Mainlaying Works												Fresh Water / Salt Water Mainlaying												E&M Installation												E&M Installation for Ancillary Buildings												E&M Installation for Relocated DHSRs and Pumping Stations												Other Associated Works												Slope, Landscaping Works and Reinstatement for Access Tunnel Portal												Predicted Noise Level during Daytime Period, dB(A)											

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 75 dB(A)

Note:

[1] Distance Correction for PMEs = 10*log(2*PI^r) [where PI = 3.1416 and r is the distance of NSR from notional noise source]

[2] The figures are rounded-up to a whole number.

Construction Noise Assessment (Mitigated Scenario 1)

NSR 12

Mui Yuen House, Chuk Yuen North Estate

Representative Floor: 1

mPD Level: 58

(Low Level)

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	2022												2023												2024												2025												2026												2027																																																		
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																												
General													Site Mobilization																																																																																																											
Cavern and Tunnel Construction													Excavation at Access Tunnel Portal																																																																																																											
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Structural Works													Ancillary Buildings at Tunnel Portal																																																																																																											
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Mainlaying Works													Fresh Water / Salt Water Mainlaying																																																																																																											
E&M Installation													E&M Installation for Ancillary Buildings																																																																																																											
													E&M Installation for Relocated DHSRs and Pumping Stations																																																																																																											
Other Associated Works													Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																																																											
													Predicted Noise Level during Daytime Period, dB(A)												37												37												37												42												42												42												42												42											

Representative Floor: 17

mPD Level: 103

(Mid Level)

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	2022												2023												2024												2025												2026												2027																																																		
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																												
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Other Associated Works													Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																																																											
													Predicted Noise Level during Daytime Period, dB(A)												37												37												37												42												42												42												42												42											

Representative Floor: 34

mPD Level: 151

(High Level)

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	2022												2023												2024												2025												2026												2027																																																		
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																												
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Mainlaying Works													Fresh Water / Salt Water Mainlaying																																																																																																											
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Other Associated Works													Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																																																											
													Predicted Noise Level during Daytime Period, dB(A)												37												37												37												42												42												42												42												42											

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 75 dB(A)

Note:
 [1] Distance Correction for PMEs = 10*log(2*PI^r) [where PI = 3.1416 and r is the distance of NSR from notional noise source]
 [2] The figures are rounded-up to a whole number.

Construction Noise Assessment (Mitigated Scenario 1)

NSR 13

Our Lady of Maryknoll Hospital

Table for m'PD Level: 46 (Low Level). Includes columns for Activity, Works ID, Area, Distance, mPD Level, SWL, Distance m, Corr. for Distance, Corr. for Topo, Corr. for façade, and noise levels for years 2022-2027.

Table for m'PD Level: 55 (Mid Level). Includes columns for Activity, Works ID, Area, Distance, mPD Level, SWL, Distance m, Corr. for Distance, Corr. for Topo, Corr. for façade, and noise levels for years 2022-2027.

Table for m'PD Level: 64 (High Level). Includes columns for Activity, Works ID, Area, Distance, mPD Level, SWL, Distance m, Corr. for Distance, Corr. for Topo, Corr. for façade, and noise levels for years 2022-2027.

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 75 dB(A)

Note: [1] Distance Correction for PmEs = 10*log(2*PI^2/r^2) [where PI = 3.1416 and r is the distance of NSR from notional noise source] [2] The figures are rounded-up to a whole number.

Construction Noise Assessment (Mitigated Scenario 1)

NSR 14

Our Lady's College

Representative Floor:		1		mPD Level: 42 (Low Level)							2022												2023												2024												2025												2026												2027											
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12						
General																																																																																		
Site Mobilization																																																																																		
Excavation at Access Tunnel Portal																																																																																		
Construction of Access Tunnel																																																																																		
Construction of Cavern																																																																																		
Stone Crushing (within Noise Enclosure)																																																																																		
Structural Works																																																																																		
Ancillary Buildings at Tunnel Portal																																																																																		
Structural Works for Relocated DHSRs and Pumping Stations																																																																																		
Mainlaying Works																																																																																		
Fresh Water / Salt Water Mainlaying																																																																																		
E&M Installation																																																																																		
E&M Installation for Ancillary Buildings																																																																																		
E&M Installation for Relocated DHSRs and Pumping Stations																																																																																		
Other Associated Works																																																																																		
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																																		
Predicted Noise Level during Daytime Period, dB(A)																																																																																		

Representative Floor:		3		mPD Level: 49 (Mid Level)							2022												2023												2024												2025												2026												2027											
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12						
General																																																																																		
Site Mobilization																																																																																		
Excavation at Access Tunnel Portal																																																																																		
Construction of Access Tunnel																																																																																		
Construction of Cavern																																																																																		
Stone Crushing (within Noise Enclosure)																																																																																		
Structural Works																																																																																		
Ancillary Buildings at Tunnel Portal																																																																																		
Structural Works for Relocated DHSRs and Pumping Stations																																																																																		
Mainlaying Works																																																																																		
Fresh Water / Salt Water Mainlaying																																																																																		
E&M Installation																																																																																		
E&M Installation for Ancillary Buildings																																																																																		
E&M Installation for Relocated DHSRs and Pumping Stations																																																																																		
Other Associated Works																																																																																		
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																																		
Predicted Noise Level during Daytime Period, dB(A)																																																																																		

Representative Floor:		6		mPD Level: 58 (High Level)							2022												2023												2024												2025												2026												2027											
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12						
General																																																																																		
Site Mobilization																																																																																		
Excavation at Access Tunnel Portal																																																																																		
Construction of Access Tunnel																																																																																		
Construction of Cavern																																																																																		
Stone Crushing (within Noise Enclosure)																																																																																		
Structural Works																																																																																		
Ancillary Buildings at Tunnel Portal																																																																																		
Structural Works for Relocated DHSRs and Pumping Stations																																																																																		
Mainlaying Works																																																																																		
Fresh Water / Salt Water Mainlaying																																																																																		
E&M Installation																																																																																		
E&M Installation for Ancillary Buildings																																																																																		
E&M Installation for Relocated DHSRs and Pumping Stations																																																																																		
Other Associated Works																																																																																		
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																																		
Predicted Noise Level during Daytime Period, dB(A)																																																																																		

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 70 dB(A) during school days
 Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 65dB(A) during examination period

Note:

[1] Distance Correction for PMEs = 10*log(2*PI^2) [where PI = 3.1416 and r is the distance of NSR from notional noise source]

[2] The figures are rounded-up to a whole number.

Construction Noise Assessment (Mitigated Scenario 1)

NSR 17

Ying Fuk Court

Representative Floor: 1

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	mPD Level: 58	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	(Low Level)																																										
											2022			2023			2024			2025			2026			2027																											
											6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
General																																																					
Site Mobilization																																																					
Cavern and Tunnel Construction																																																					
Excavation at Access Tunnel Portal																																																					
Construction of Access Tunnel																																																					
Construction of Cavern																																																					
Stone Crushing (within Noise Enclosure)																																																					
Structural Works																																																					
Ancillary Buildings at Tunnel Portal																																																					
Structural Works for Relocated DHSRs and Pumping Stations																																																					
Mainlaying Works																																																					
Fresh Water / Salt Water Mainlaying																																																					
E&M Installation																																																					
E&M Installation for Ancillary Buildings																																																					
E&M Installation for Relocated DHSRs and Pumping Stations																																																					
Other Associated Works																																																					
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																					
Predicted Noise Level during Daytime Period, dB(A)																																																					

Representative Floor: 19

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	mPD Level: 107	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	(Mid Level)																																										
											2022			2023			2024			2025			2026			2027																											
											6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
General																																																					
Site Mobilization																																																					
Cavern and Tunnel Construction																																																					
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Structural Works																																																					
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Mainlaying Works																																																					
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E&M Installation																																																					
E&M Installation for Ancillary Buildings																																																					
E&M Installation for Relocated DHSRs and Pumping Stations																																																					
Other Associated Works																																																					
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																					
Predicted Noise Level during Daytime Period, dB(A)																																																					

Representative Floor: 37

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	mPD Level: 155	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	(High Level)																																										
											2022			2023			2024			2025			2026			2027																											
											6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
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Site Mobilization																																																					
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Excavation at Access Tunnel Portal																																																					
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Stone Crushing (within Noise Enclosure)																																																					
Structural Works																																																					
Ancillary Buildings at Tunnel Portal																																																					
Structural Works for Relocated DHSRs and Pumping Stations																																																					
Mainlaying Works																																																					
Fresh Water / Salt Water Mainlaying																																																					
E&M Installation																																																					
E&M Installation for Ancillary Buildings																																																					
E&M Installation for Relocated DHSRs and Pumping Stations																																																					
Other Associated Works																																																					
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																					
Predicted Noise Level during Daytime Period, dB(A)																																																					

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 75 dB(A)

Note: [1] Distance Correction for PMEs = 10*log(2^PI/r^2) [where PI = 3.1416 and r is the distance of NSR from notional noise source] [2] The figures are rounded-up to a whole number.

Construction Noise Assessment (Mitigated Scenario 1)

Table for St. Bonaventure College and High School (Low Level) showing noise levels for activities like Site Mobilization, Excavation, Construction, Stone Crushing, etc., across years 2022-2027.

Table for St. Bonaventure College and High School (Mid Level) showing noise levels for activities like Site Mobilization, Excavation, Construction, Stone Crushing, etc., across years 2022-2027.

Table for St. Bonaventure College and High School (High Level) showing noise levels for activities like Site Mobilization, Excavation, Construction, Stone Crushing, etc., across years 2022-2027.

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 70 dB(A) during school days
Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 65dB(A) during examination period

Note:

[1] Distance Correction for PMEs = 10*log(2*PI^2) [where PI = 3.1416 and r is the distance of NSR from notional noise source]

[2] The figures are rounded-up to a whole number.

Construction Noise Assessment (Mitigated Scenario 1)

NSR 20 Wu York Yu Health Centre

Representative Floor:		G		mPD Level: 55 (Low Level)							2022												2023												2024												2025												2026												2027																																																										
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																																					
General										Site Mobilization												Excavation at Access Tunnel Portal												Construction of Access Tunnel												Construction of Cavern												Stone Crushing (within Noise Enclosure)																																																																							
Structural Works										Ancillary Buildings at Tunnel Portal												Structural Works for Relocated DHSRs and Pumping Stations												Mainlaying Works												Fresh Water / Salt Water Mainlaying												E&M Installation												E&M Installation for Ancillary Buildings												E&M Installation for Relocated DHSRs and Pumping Stations												Other Associated Works												Slope, Landscaping Works and Reinstatement for Access Tunnel Portal												Predicted Noise Level during Daytime Period, dB(A)											

Representative Floor:		2		mPD Level: 62 (Mid Level)							2022												2023												2024												2025												2026												2027																																																										
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																																					
General										Site Mobilization												Excavation at Access Tunnel Portal												Construction of Access Tunnel												Construction of Cavern												Stone Crushing (within Noise Enclosure)																																																																							
Structural Works										Ancillary Buildings at Tunnel Portal												Structural Works for Relocated DHSRs and Pumping Stations												Mainlaying Works												Fresh Water / Salt Water Mainlaying												E&M Installation												E&M Installation for Ancillary Buildings												E&M Installation for Relocated DHSRs and Pumping Stations												Other Associated Works												Slope, Landscaping Works and Reinstatement for Access Tunnel Portal												Predicted Noise Level during Daytime Period, dB(A)											

Representative Floor:		3		mPD Level: 65 (High Level)							2022												2023												2024												2025												2026												2027																																																										
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																																					
General										Site Mobilization												Excavation at Access Tunnel Portal												Construction of Access Tunnel												Construction of Cavern												Stone Crushing (within Noise Enclosure)																																																																							
Structural Works										Ancillary Buildings at Tunnel Portal												Structural Works for Relocated DHSRs and Pumping Stations												Mainlaying Works												Fresh Water / Salt Water Mainlaying												E&M Installation												E&M Installation for Ancillary Buildings												E&M Installation for Relocated DHSRs and Pumping Stations												Other Associated Works												Slope, Landscaping Works and Reinstatement for Access Tunnel Portal												Predicted Noise Level during Daytime Period, dB(A)											

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 75 dB(A)

Note:
 [1] Distance Correction for PMEs = 10*log(2^PI/r^2) [where PI = 3.1416 and r is the distance of NSR from notional noise source]
 [2] The figures are rounded-up to a whole number.

Construction Noise Assessment (Mitigated Scenario 1)

NSR 21

Twghs Wong Tai Sin Hospital

Table for mPD Level: 67 (Low Level). Columns include Activity, Works ID, Works Area, Hor. Dist. m, mPD Level, SWL dB(A), Distance m, Corr. for Distance dB(A) [1][2], Corr. for Topo, Corr. for façade dB(A), and noise levels for years 2022-2027 across months 1-12.

Table for mPD Level: 75 (Mid Level). Columns include Activity, Works ID, Works Area, Hor. Dist. m, mPD Level, SWL dB(A), Distance m, Corr. for Distance dB(A) [1][2], Corr. for Topo, Corr. for façade dB(A), and noise levels for years 2022-2027 across months 1-12.

Table for mPD Level: 83 (High Level). Columns include Activity, Works ID, Works Area, Hor. Dist. m, mPD Level, SWL dB(A), Distance m, Corr. for Distance dB(A) [1][2], Corr. for Topo, Corr. for façade dB(A), and noise levels for years 2022-2027 across months 1-12.

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 75 dB(A)

Note:
[1] Distance Correction for PMEs = 10*log(2*PI^2/r) [where PI = 3.1416 and r is the distance of NSR from notional noise source]
[2] The figures are rounded-up to a whole number.

Construction Noise Assessment (Mitigated Scenario 1)

NSR 25 Wo Tin House

Representative Floor: 1 m'PD Level: 129 (Low Level). Table with columns for Activity, Works ID, Works Area, Hor. Dist. m, m'PD Level, SWL dB(A), Distance m, Corr. for Distance dB(A) [1][2], Corr. for Topo, Corr. for façade dB(A), and monthly noise level values from 2022 to 2027.

Representative Floor: 21 m'PD Level: 181 (Mid Level). Table with columns for Activity, Works ID, Works Area, Hor. Dist. m, m'PD Level, SWL dB(A), Distance m, Corr. for Distance dB(A) [1][2], Corr. for Topo, Corr. for façade dB(A), and monthly noise level values from 2022 to 2027.

Representative Floor: 41 m'PD Level: 233 (High Level). Table with columns for Activity, Works ID, Works Area, Hor. Dist. m, m'PD Level, SWL dB(A), Distance m, Corr. for Distance dB(A) [1][2], Corr. for Topo, Corr. for façade dB(A), and monthly noise level values from 2022 to 2027.

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 75 dB(A)

Note:
[1] Distance Correction for PMEs = 10*log2(Pi^2/r) [where Pi = 3.1416 and r is the distance of NSR from notional noise source]
[2] The figures are rounded-up to a whole number.

Construction Noise Assessment (Mitigated Scenario 1)

NSR 26 CCC Kei Tsz Primary School

Representative Floor:		mPD Level: 135 (Low Level)								2022												2023												2024												2025												2026												2027																		
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
General																																																																																								
Site Mobilization																																																																																								
Cavern and Tunnel Construction																																																																																								
Excavation at Access Tunnel Portal																																																																																								
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Structural Works for Relocated DHSRs and Pumping Stations																																																																																								
Mainlaying Works																																																																																								
Fresh Water / Salt Water Mainlaying																																																																																								
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Other Associated Works																																																																																								
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																																								
Predicted Noise Level during Daytime Period, dB(A)																																																																																								

Representative Floor:		mPD Level: 144 (Mid Level)								2022												2023												2024												2025												2026												2027																		
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
General																																																																																								
Site Mobilization																																																																																								
Cavern and Tunnel Construction																																																																																								
Excavation at Access Tunnel Portal																																																																																								
Construction of Access Tunnel																																																																																								
Construction of Cavern																																																																																								
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E&M Installation for Relocated DHSRs and Pumping Stations																																																																																								
Other Associated Works																																																																																								
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																																								
Predicted Noise Level during Daytime Period, dB(A)																																																																																								

Representative Floor:		mPD Level: 152 (High Level)								2022												2023												2024												2025												2026												2027																		
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
General																																																																																								
Site Mobilization																																																																																								
Cavern and Tunnel Construction																																																																																								
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Other Associated Works																																																																																								
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																																								
Predicted Noise Level during Daytime Period, dB(A)																																																																																								

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 70 dB(A) during school days
 Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 65dB(A) during examination period

Note:

[1] Distance Correction for PMEs = 10*log(2*PI^2) [where PI = 3.1416 and r is the distance of NSR from notional noise source]
 [2] The figures are rounded-up to a whole number.

Construction Noise Assessment (Mitigated Scenario 1)

NSR PI

Proposed Departmental Quarters for Customs & Excise Department

Representative Floor:		mPD Level: 65 (Low Level)									2022					2023					2024					2025					2026					2027																																																																																															
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																																																			
General												Site Mobilization																																																																																																																							
Cavern and Tunnel Construction												Excavation at Access Tunnel Portal												39												37												38												38												38																																																											
												Construction of Access Tunnel												37												37												37												37												37												37																																															
												Construction of Cavern																								34												34												34												34												34																																															
												Stone Crushing (within Noise Enclosure)												3												34												34												34												34												34																																															
Structural Works												Ancillary Buildings at Tunnel Portal																																				40												40												40												40																																															
												Structural Works for Relocated DHSRs and Pumping Stations												3																																				27												27												27												27																																			
Mainlaying Works												Fresh Water / Salt Water Mainlaying												75												75												75												75												75												75																																															
E&M Installation												E&M Installation for Ancillary Buildings																																																34												34												34												34																																			
												E&M Installation for Relocated DHSRs and Pumping Stations												3																																				25												25												25												25																																			
Other Associated Works												Slope, Landscaping Works and Reinstatement for Access Tunnel Portal												3																																																												31												31												31												31											
												Predicted Noise Level during Daytime Period, dB(A)												35												35												35												35												35												35												35												35																							

Representative Floor:		mPD Level: 100 (Mid Level)									2022					2023					2024					2025					2026					2027																																																																																															
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																																																			
General												Site Mobilization																																																																																																																							
Cavern and Tunnel Construction												Excavation at Access Tunnel Portal												39												37												38												38												38																																																											
												Construction of Access Tunnel												3												37												37												37												37												37																																															
												Construction of Cavern																								34												34												34												34												34																																															
												Stone Crushing (within Noise Enclosure)												3												34												34												34												34												34																																															
Structural Works												Ancillary Buildings at Tunnel Portal																																				40												40												40												40																																															
												Structural Works for Relocated DHSRs and Pumping Stations												3																																				27												27												27												27																																			
Mainlaying Works												Fresh Water / Salt Water Mainlaying												62												62												62												62												62												62																																															
E&M Installation												E&M Installation for Ancillary Buildings												3																																				34												34												34												34																																			
												E&M Installation for Relocated DHSRs and Pumping Stations												3																																				25												25												25												25																																			
Other Associated Works												Slope, Landscaping Works and Reinstatement for Access Tunnel Portal												3																																																												31												31												31												31											
												Predicted Noise Level during Daytime Period, dB(A)												35												35												35												35												35												35												35												35																							

Representative Floor:		mPD Level: 134 (High Level)									2022					2023					2024					2025					2026					2027																																																																																															
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																																																			
General												Site Mobilization																																																																																																																							
Cavern and Tunnel Construction												Excavation at Access Tunnel Portal												39												37												38												38												38																																																											
												Construction of Access Tunnel												3												37												37												37												37												37																																															
												Construction of Cavern																								34												34												34												34												34																																															
												Stone Crushing (within Noise Enclosure)												3												34												34												34												34												34																																															
Structural Works												Ancillary Buildings at Tunnel Portal																																				40												40												40												40																																															
												Structural Works for Relocated DHSRs and Pumping Stations												3																																				27												27												27												27																																			
Mainlaying Works												Fresh Water / Salt Water Mainlaying												57												57												57												57												57												57																																															
E&M Installation												E&M Installation for Ancillary Buildings												3																																				34												34												34												34																																			
												E&M Installation for Relocated DHSRs and Pumping Stations												3																																				25												25												25												25																																			
Other Associated Works												Slope, Landscaping Works and Reinstatement for Access Tunnel Portal												3																																																												31												31												31												31											
												Predicted Noise Level during Daytime Period, dB(A)												35												35												35												35												35												35												35												35																							

Predicted Noise Level exceeded the corresponding EIAO-TM noise criteria of 75 dB(A)

Note:

[1] Distance Correction for PMEs = $10 \log(2 \cdot PI^r)$ [where PI = 3.1416 and r is the distance of NSR from notional noise source]

[2] The figures are rounded-up to a whole number.

Construction Plant Inventory (Mitigated Scenario 2)

Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	General									
1-1	Site Mobilization - Excavation	Air Compressor, air flow > 10m ³ /min and < 30m ³ /min	EPD-08976	98	1	60%	Enclosure	-10	86	102
		Breaker, excavator mounted (hydraulic)	(Ref: Sandhurst - XT-200) ^[4]	110	1	50%	Barrier	-5	102	
		Excavator/loader, wheeled/tracked	EPD-08966	91	1	70%	Barrier	-5	84	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	50%	Enclosure	-10	80	
	Site Mobilization - Formation of works site	Concrete lorry mixer	CNP 044	109	1	40%	Barrier	-5	100	101
		Poker, vibratory, hand-held	EPD/PME/19	102	1	40%	Barrier	-5	93	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	70%	Enclosure	-10	81	
	Site Mobilization - Mobilization of construction plants and materials	Crane, mobile	EPD-08588	93	1	45%			90	98
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	50%	Barrier	-5	97	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	50%	Enclosure	-10	80	

Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	Cavern and Tunnel Construction									
2-1	Open-cut Construction of Tunnel and Tunnel Portal	Excavator/loader, wheeled/tracked	EPD-08966	91	1	70%	Barrier	-5	84	107
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	70%	Barrier	-5	98	
		Piling, vibrating hammer	[2]	115	1	40%	Barrier	-5	106	
2-2	Excavation of Access Tunnel	Rock drill, crawler mounted (hydraulic)	CNP 182	123	1	75%	Inside Cavern	-20	102	103
		Breaker, excavator mounted (hydraulic)	(Ref: Sandhurst - XT-200) ^[4]	110	1	80%	Inside Cavern	-20	89	
		Water pump (electric)	CNP 281	88	2	80%	Inside Cavern	-20	70	
		Concrete pump, stationary/lorry mounted	CNP 047	109	1	60%	Inside Cavern	-20	87	
		Concrete lorry mixer	CNP 044	109	1	60%	Inside Cavern	-20	87	
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	70%	Inside Cavern	-20	83	
		Ventilation fan	CNP 241	108	2	100%	Inside Cavern	-20	91	
Conveyor Belt	CNP 041	90	1	100%	Inside Cavern	-20	70			
2-3	Excavation of Cavern	Rock drill, crawler mounted (hydraulic)	CNP 182	123	1	75%	Inside Cavern	-20	102	103
		Breaker, excavator mounted (hydraulic)	(Ref: Sandhurst - XT-200) ^[4]	110	1	80%	Inside Cavern	-20	89	
		Water pump (electric)	CNP 281	88	2	80%	Inside Cavern	-20	70	
		Concrete pump, stationary/lorry mounted	CNP 047	109	1	60%	Inside Cavern	-20	87	
		Concrete lorry mixer	CNP 044	109	1	60%	Inside Cavern	-20	87	
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	70%	Inside Cavern	-20	83	
		Ventilation fan	CNP 241	108	2	100%	Inside Cavern	-20	91	
Conveyor Belt	CNP 041	90	1	100%	Inside Cavern	-20	70			
2-4	Stone Crushing	Stone Crusher	[3]	115	1	50%	Enclosure	-10	102	102

Appendix 4E-1 Construction Noise Calculation for Mitigated Scenario 1 and 2

Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	Structural Works									
3-1	Anciliary Buildings at Tunnel Portal - Excavation	Air Compressor, air flow > 10m ³ /min and < 30m ³ /min	EPD-08976	98	1	60%	Enclosure	-10	86	99
		Breaker, hand-held, mass > 20kg and < 35kg	EPD-07425	103	1	50%	Barrier	-5	95	
		Excavator/loader, wheeled/tracked	EPD-08966	91	1	70%	Barrier	-5	84	
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	50%	Barrier	-5	97	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	50%	Enclosure	-10	80	
	Anciliary Buildings at Tunnel Portal - Foundation	Concrete lorry mixer	CNP 044	109	1	40%	Barrier	-5	100	107
		Piling, earth auger, auger	CNP 167	114	1	50%	Barrier	-5	106	
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	50%	Barrier	-5	97	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	70%	Enclosure	-10	81	
	Anciliary Buildings at Tunnel Portal - Structural Works	Crane, mobile	EPD-08588	93	1	45%			90	106
		Concrete lorry mixer	CNP 044	109	1	80%	Barrier	-5	103	
		Poker, vibratory, hand-held	EPD/PME/19	102	1	80%	Barrier	-5	96	
		Saw, circular, wood	CNP 201	108	1	60%	Barrier	-5	101	
		Bar bender and cutter (electric)	CNP 021	90	1	70%	Barrier	-5	83	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	50%	Enclosure	-10	80	
3-2	Structural Works for Relocated DHSRs and Pumping Stations	Crane, mobile	EPD-08588	93	1	70%	Inside Cavern	-20	71	91
		Concrete lorry mixer	CNP 044	109	1	80%	Inside Cavern	-20	88	
		Poker, vibratory, hand-held	EPD/PME/19	102	1	80%	Inside Cavern	-20	81	
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	100%	Inside Cavern	-20	73	
		Saw, circular, wood	CNP 201	108	1	70%	Inside Cavern	-20	86	
		Bar bender and cutter (electric)	CNP 021	90	1	70%	Inside Cavern	-20	68	
Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	Mainlaying									
4-1	Fresh Water / Salt Water Mainlaying - Surface Breaking	Hand-held Percussive Breaker	EPD-08782	99	1	30%	Barrier	-5	89	89
		Generator, silenced, 75dB(A) at 7m	EPD-08978	93	1	30%	Enclosure	-10	78	
	Fresh Water / Salt Water Mainlaying - Excavation & Pipe laying	Excavator, mini-robot mounted	[2]	94	1	30%	Barrier	-5	84	84
	Fresh Water / Salt Water Mainlaying - Reinstatement (Group 1)	Concrete lorry mixer	CNP 044	109	1	30%	Barrier	-5	99	99
									SWL at 10m	
Fresh Water / Salt Water Mainlaying - Reinstatement (Group 2)	Poker, vibratory, hand-held (electric)	[2]	102	1	30%	Barrier	-5	92	92	
		Generator, silenced, 75 dB(A) at 7 m	EPD-08978	93	1	30%	Enclosure	-10	78	

Appendix 4E-1 Construction Noise Calculation for Mitigated Scenario 1 and 2

Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	E&M Installation									
5-1	E&M Installation for Ancillary Buildings	Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	100%	Barrier	-5	100	102
		Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	50%	Barrier	-5	97	
5-2	E&M Installation for Relocated DHSRs and Pumping Stations	Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	100%	Inside Cavern	-20	85	89
		Ventilation fan	CNP 241	108	1	70%	Inside Cavern	-20	86	
		Generator, silenced, 75 dB(A) at 7 m	EPD-08978	93	1	70%	Inside Cavern	-20	71	

Works ID	Activities	Plant	TM Ref. / Other Ref.	Unit SWL, dB(A)	No. of PME	On- time %	Type of Noise Control	Noise reduction, dB(A)	SWL, dB(A)	Total SWL, dB(A)
	Other Associated Works									
6-1	Slope, Landscaping Works and Reinstatement for Access Tunnel Portal	Lorry, with crane/grab, 5.5 tonne < gross vehicle weight ≤ 38 tonne	[2]	105	1	70%	Barrier	-5	98	98

Notes:

- [1] As only one group of PME would be operated simultaneously under same Works ID, only the activity with the highest total SWL under the same Works ID will be used for the construction noise assessment for each NSR
- [2] Sound power levels of other commonly used PME (http://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)
- [3] Quality Powered Mechanical Equipment (https://www.epd.gov.hk/cgi-bin/npg/qpme/search_gen.pl?lang=eng&st=sim&valid=Y)
- [4] Reference for Sandhurst - XT-200 is made from EIA-235/2015 - Development of Anderson Road Quarry Site
- [5] Reference for Sandhurst - XT-200 is made from EIA-235/2015 - Development of Anderson Road Quarry Site

Summary of Predicted Noise Levels from Construction (Mitigated Scenario 2)

NSR	Description	EIAO-TM Noise Criteria, dB(A)	Max. Predicted CNL, db(A)			
			Low Level	Mid Level	High Level	Overall
NSR 5	Grace Methodist Church Kindergarten	70 (normal school days)	69	N/A	N/A	69
		65 (examination period)	65	N/A	N/A	65
NSR 13	Our Lady of Maryknoll Hospital	75	74	65	61	74
NSR 14	Our Lady's College	70 (normal school days)	68	68	66	68
		65 (examination period)	64	64	63	64
NSR 19	St. Bonaventure College and High School	70 (normal school days)	68	66	64	68
		65 (examination period)	64	64	62	64
NSR 20	Wu York Yu Health Centre	75	70	67	65	70
NSR 22	Ho Lap Primary School	70 (normal school days)	66	65	64	66
		65 (examination period)	64	64	63	64

Concrete lorry mixer shall be located 10 m away from the residential site boundary during Fresh Water/Salt Water Mainlaying (Reinstatement Works)

Fresh Water / Salt Water Mainlaying (Reinstatement Works) will be carried out during School Holidays (i.e. 20m from the school site boundary)

* During examination period, no mainlaying works will be carried out within 30m (for NSR 14, NSR 19 and NSR22) or 50m (for NSR5) from the school site boundary

Construction Noise Assessment (Mitigated Scenario 2)

NSR 13

Our Lady of Maryknoll Hospital

Representative Floor:		mPD Level: 46 (Low Level)																																																				
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	2022					2023					2024					2025					2026					2027																			
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
General																																																						
Site Mobilization																																																						
Cavern and Tunnel Construction																																																						
Excavation at Access Tunnel Portal																																																						
Construction of Access Tunnel																																																						
Construction of Cavern																																																						
Stone Crushing (within Noise Enclosure)																																																						
Structural Works																																																						
Ancillary Buildings at Tunnel Portal																																																						
Structural Works for Relocated DHSRs and Pumping Stations																																																						
Mainlaying Works																																																						
Fresh Water / Salt Water Mainlaying																																																						
E&M Installation																																																						
E&M Installation for Ancillary Buildings																																																						
E&M Installation for Relocated DHSRs and Pumping Stations																																																						
Other Associated Works																																																						
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																						
Predicted Noise Level during Daytime Period, dB(A)																																																						

Representative Floor:		mPD Level: 55 (Mid Level)																																																				
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	2022					2023					2024					2025					2026					2027																			
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
General																																																						
Site Mobilization																																																						
Cavern and Tunnel Construction																																																						
Excavation at Access Tunnel Portal																																																						
Construction of Access Tunnel																																																						
Construction of Cavern																																																						
Stone Crushing (within Noise Enclosure)																																																						
Structural Works																																																						
Ancillary Buildings at Tunnel Portal																																																						
Structural Works for Relocated DHSRs and Pumping Stations																																																						
Mainlaying Works																																																						
Fresh Water / Salt Water Mainlaying																																																						
E&M Installation																																																						
E&M Installation for Ancillary Buildings																																																						
E&M Installation for Relocated DHSRs and Pumping Stations																																																						
Other Associated Works																																																						
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																						
Predicted Noise Level during Daytime Period, dB(A)																																																						

Representative Floor:		mPD Level: 64 (High Level)																																																				
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	2022					2023					2024					2025					2026					2027																			
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
General																																																						
Site Mobilization																																																						
Cavern and Tunnel Construction																																																						
Excavation at Access Tunnel Portal																																																						
Construction of Access Tunnel																																																						
Construction of Cavern																																																						
Stone Crushing (within Noise Enclosure)																																																						
Structural Works																																																						
Ancillary Buildings at Tunnel Portal																																																						
Structural Works for Relocated DHSRs and Pumping Stations																																																						
Mainlaying Works																																																						
Fresh Water / Salt Water Mainlaying																																																						
E&M Installation																																																						
E&M Installation for Ancillary Buildings																																																						
E&M Installation for Relocated DHSRs and Pumping Stations																																																						
Other Associated Works																																																						
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																						
Predicted Noise Level during Daytime Period, dB(A)																																																						

Note:
 [1] Distance Correction for PMEs = $10 \cdot \log(2 \cdot \frac{P}{r^2})$ [where P = 3.1416 and r is the distance of NSR from notional noise source]
 [2] The figures are rounded-up to a whole number.

Remarks: The concrete lorry mixer shall be located 10 m away from the residential site boundary during the construction works of Fresh Water/Salt Water Mainlaying (Reinstatement Works).

Construction Noise Assessment (Mitigated Scenario 2)

NSR 14

Representative Floor: **Our Lady's College** (Normal School Days)

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	mPD Level: 42		(Low Level)																																							
							Corr. for Distance dB(A) [1][2]	Corr. for Topo	2022					2023					2024					2025					2026					2027														
									6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9
General																																																
Site Mobilization																																																
Cavern and Tunnel Construction																																																
Excavation at Access Tunnel Portal																																																
Construction of Access Tunnel																																																
Construction of Cavern																																																
Stone Crushing (within Noise Enclosure)																																																
Structural Works																																																
Ancillary Buildings at Tunnel Portal																																																
Structural Works for Relocated DHSRs and Pumping Stations																																																
Mainlaying Works																																																
Fresh Water / Salt Water Mainlaying																																																
E&M Installation																																																
E&M Installation for Ancillary Buildings																																																
E&M Installation for Relocated DHSRs and Pumping Stations																																																
Other Associated Works																																																
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																
Predicted Noise Level during Daytime Period, dB(A)																																																

Representative Floor: **3** (Mid Level)

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	mPD Level: 49		(Mid Level)																																							
							Corr. for Distance dB(A) [1][2]	Corr. for Topo	2022					2023					2024					2025					2026					2027														
									6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9
General																																																
Site Mobilization																																																
Cavern and Tunnel Construction																																																
Excavation at Access Tunnel Portal																																																
Construction of Access Tunnel																																																
Construction of Cavern																																																
Stone Crushing (within Noise Enclosure)																																																
Structural Works																																																
Ancillary Buildings at Tunnel Portal																																																
Structural Works for Relocated DHSRs and Pumping Stations																																																
Mainlaying Works																																																
Fresh Water / Salt Water Mainlaying																																																
E&M Installation																																																
E&M Installation for Ancillary Buildings																																																
E&M Installation for Relocated DHSRs and Pumping Stations																																																
Other Associated Works																																																
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																
Predicted Noise Level during Daytime Period, dB(A)																																																

Representative Floor: **6** (High Level)

Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	mPD Level: 58		(High Level)																																							
							Corr. for Distance dB(A) [1][2]	Corr. for Topo	2022					2023					2024					2025					2026					2027														
									6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9
General																																																
Site Mobilization																																																
Cavern and Tunnel Construction																																																
Excavation at Access Tunnel Portal																																																
Construction of Access Tunnel																																																
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Stone Crushing (within Noise Enclosure)																																																
Structural Works																																																
Ancillary Buildings at Tunnel Portal																																																
Structural Works for Relocated DHSRs and Pumping Stations																																																
Mainlaying Works																																																
Fresh Water / Salt Water Mainlaying																																																
E&M Installation																																																
E&M Installation for Ancillary Buildings																																																
E&M Installation for Relocated DHSRs and Pumping Stations																																																
Other Associated Works																																																
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																
Predicted Noise Level during Daytime Period, dB(A)																																																

Note:
 [1] Distance Correction for PMEs = 10*log(2*Pi*r²) [where Pi = 3.1416 and r is the distance of NSR from notional noise source]
 [2] The figures are rounded-up to a whole number.

Remarks: The construction works of Fresh Water/Salt Water Mainlaying (Reinstatement Works) shall be arranged and carried out during school holidays (i.e. the section of the mainlaying alignment is 20m measured from the school site boundary).

Construction Noise Assessment (Mitigated Scenario 2)

NSR 20

Wu York Yu Health Centre

Activity	Works		Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	(Low Level)																																																																				
	ID	Area								2022									2023									2024									2025									2026									2027																							
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
General																																																																														
Site Mobilization																																																																														
Cavern and Tunnel Construction																																																																														
Excavation at Access Tunnel Portal																																																																														
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Structural Works																																																																														
Ancillary Buildings at Tunnel Portal																																																																														
Structural Works for Relocated DHSRs and Pumping Stations																																																																														
Mainlaying Works																																																																														
Fresh Water / Salt Water Mainlaying																																																																														
E&M Installation																																																																														
E&M Installation for Ancillary Buildings																																																																														
E&M Installation for Relocated DHSRs and Pumping Stations																																																																														
Other Associated Works																																																																														
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																														
Predicted Noise Level during Daytime Period, dB(A)																																																																														

Activity	Works		Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	(Mid Level)																																																																				
	ID	Area								2022									2023									2024									2025									2026									2027																							
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
General																																																																														
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Structural Works for Relocated DHSRs and Pumping Stations																																																																														
Mainlaying Works																																																																														
Fresh Water / Salt Water Mainlaying																																																																														
E&M Installation																																																																														
E&M Installation for Ancillary Buildings																																																																														
E&M Installation for Relocated DHSRs and Pumping Stations																																																																														
Other Associated Works																																																																														
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																														
Predicted Noise Level during Daytime Period, dB(A)																																																																														

Activity	Works		Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	(High Level)																																																																				
	ID	Area								2022									2023									2024									2025									2026									2027																							
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
General																																																																														
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Other Associated Works																																																																														
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																																														
Predicted Noise Level during Daytime Period, dB(A)																																																																														

Note:

[1] Distance Correction for PMEs = 10*log(2*PI*r²) [where PI = 3.1416 and r is the distance of NSR from notional noise source]

[2] The figures are rounded-up to a whole number.

Remarks: The concrete lorry mixer shall be located 10 m away from the residential site boundary during the construction works of Fresh Water/Salt Water Mainlaying (Reinstatement Works).

Construction Noise Assessment (Mitigated Scenario 2)

NSR 22										Ho Lap Primary School										(Normal School Days)																																		
Representative Floor: 1										mPD Level: 64										(Low Level)																																		
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	2022					2023					2024					2025					2026					2027																			
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
General																																																						
Site Mobilization																																																						
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Structural Works for Relocated DHSRs and Pumping Stations																																																						
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Fresh Water / Salt Water Mainlaying																																																						
E&M Installation																																																						
E&M Installation for Ancillary Buildings																																																						
E&M Installation for Relocated DHSRs and Pumping Stations																																																						
Other Associated Works																																																						
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																																						
Predicted Noise Level during Daytime Period, dB(A)																																																						

Representative Floor: 3										mPD Level: 71										(Mid Level)																						
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	2022					2023					2024					2025					2026					2027							
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
General																																										
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Mainlaying Works																																										
Fresh Water / Salt Water Mainlaying																																										
E&M Installation																																										
E&M Installation for Ancillary Buildings																																										
E&M Installation for Relocated DHSRs and Pumping Stations																																										
Other Associated Works																																										
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																										
Predicted Noise Level during Daytime Period, dB(A)																																										

Representative Floor: 6										mPD Level: 82										(High Level)																						
Activity	Works ID	Works Area	Hor. Dist. m	mPD Level	SWL dB(A)	Distance m	Corr. for Distance dB(A) [1][2]	Corr. for Topo	Corr. for façade dB(A)	2022					2023					2024					2025					2026					2027							
										6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
General																																										
Site Mobilization																																										
Cavern and Tunnel Construction																																										
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Construction of Access Tunnel																																										
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Stone Crushing (within Noise Enclosure)																																										
Structural Works																																										
Ancillary Buildings at Tunnel Portal																																										
Structural Works for Relocated DHSRs and Pumping Stations																																										
Mainlaying Works																																										
Fresh Water / Salt Water Mainlaying																																										
E&M Installation																																										
E&M Installation for Ancillary Buildings																																										
E&M Installation for Relocated DHSRs and Pumping Stations																																										
Other Associated Works																																										
Slope, Landscaping Works and Reinstatement for Access Tunnel Portal																																										
Predicted Noise Level during Daytime Period, dB(A)																																										

Note:

[1] Distance Correction for PMEs = 10*log(2*PI*r²) [where PI = 3.1416 and r is the distance of NSR from notional noise source]

[2] The figures are rounded-up to a whole number.

Legend

- Representative Noise Sensitive Receivers
- Proposed Ancillary Building
- Proposed Temporary Storage Area for Construction Materials
- Proposed Access
- Proposed Cavern
- Works Area for Tunnel Portal & Ancillary Building
- Works Area for Water Mainlaying
- Study Area (300m)
- Noise Enclosure

Note:
Value in Bracket is Predicted Noise Level for Schools during Examination Period under Mitigated Scenario 2

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	PSY	ET	PSY	ET
Date	6/21	6/21	6/21	6/21

Agreement No. **CE 15/2018 (WS)**

Project Title
Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns – Investigation, Design and Construction

Figure Title
Predicted Noise Levels at Selected Assessment Points under Mitigated Scenario

Drawing No. **Appendix 4E-2** Revision **-**

Scale **A3: 1:6,500**

Client **水務署 Water Supplies Department**

Consultant **binnies**

