

## 1. INTRODUCTION

According to the air quality impact assessment results, the 1-hour average of nitrogen dioxide and 5-second average odour at some area at the level of 61.5 mA.G. exceed the air quality acceptable criteria. A16 (The HK Sea Cadet Corp Centre) and A17 (Staff Quarter for Diamond Hill Crematorium) are in the affected area but they are low-rise buildings which are not affected by the exceedance at this moment. However, attention should be given when these two ASRs are to be re-developed. The heights of the future re-development shall be restricted in view of the potential exceedance of air quality acceptable criteria in mid air.

An air quality modelling work was carried out using ISCST3 to evaluate the level of 1-hour nitrogen dioxide and 5-second odour at different levels of A16 & A17

## 2. RESULTS OF THE AIR QUALITY ASSESSMENT

The air quality assessment results are summarized in Table A5.1

**Table A5.1: The Levels of Air Pollutants at Different Levels of A16 & A17**

Building Height (mA.G.)	1-hr NO2 with background ( $\mu\text{g}/\text{m}^3$ )		Odour (5-sec) (OU)	
	A16	A17	A16	A17
<b>Air Quality Acceptable Criteria</b>	<b>300</b>		<b>5.00</b>	
85.5	85	84	0.66	0.30
82.5	93	90	1.04	0.68
79.5	110	103	1.54	1.42
76.5	132	144	2.17	2.68
73.5	156	207	2.88	4.54
70.5	183	291	3.63	6.94
67.5	208	383	4.33	9.50
64.5	228	464	4.87	11.63
61.5	241	507	5.19	12.64
58.5	243	496	5.22	12.18
55.5	235	435	4.96	10.35
52.5	218	343	4.45	7.75
49.5	194	289	3.77	5.24
46.5	168	260	3.01	1.18
43.5	141	223	2.27	0.98
40.5	125	185	1.61	0.73
37.5	119	149	1.08	0.28
34.5	113	120	0.68	0.09
31.5	106	101	0.41	0.03
28.5	99	94	0.23	0.01
25.5	93	88	0.12	0.00
22.5	87	82	0.06	0.00
19.5	81	77	0.03	0.00
16.5	78	73	0.01	0.00
13.5	77	70	0.01	0.00
10.5	77	67	0.00	0.00
7.5	77	65	0.00	0.00
4.5	77	64	0.00	0.00
1.5	76	63	0.00	0.00

Note : Shaded areas represent exceedance of air quality acceptable criteria

The following table summarizes the maximum level above ground at A16 and A17 below which there is no exceedance in either acceptable nitrogen dioxide (NO<sub>2</sub>) or odour level.

According to the EPD's "*Guidelines on Estimating Height Restriction and Position of Fresh Air Intake Using Gaussian Plume Models*", a safety margin of 10m should be included in the height restriction estimate for planning a development. After the inclusion of the recommended safety margin, the height of re-development at A16 and A17 from air quality point of view should not be higher than 45.5 m and 36.5 m above ground, respectively in order to avoid the impact due to the operation of the new Crematorium. The summary of estimated height restriction for A16 and A17 is shown as Table A5.2

Table A5.2 Summary of Height Restriction for Future Re-development of A16 & A17

	Maximum level above ground below which there is no exceedance in Air Quality Acceptable Criteria		Maximum Height Retraction
	NO <sub>2</sub>	Odour	
A16 (The HK Sea Cadet Corp Centre)	Nil	45.5 mA.G.	45.5 mA.G.
A17 (Staff Quarter for Diamond Hill Crematorium)	39.5 mA.G.	36.5 mA.G.	36.5 mA.G.

*Note : 10 m of safety margin is included in the height restriction.*