



## **Noise Impact Assessment**

Variation of Condition 19

Appeal APP/X5210/A03 1135258 & 1151824

Fortune Green Road ("Site")

37 – 63 Fortune Green Road,

London, NW6 1DR.

Sager House (Hampstead) Ltd ("Customer")

50 Seymour Street,

London, W1H 7JG.

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## Contents

1	EXECUTIVE SUMMARY.....	3
1.1	Introduction .....	3
1.2	Planning Condition.....	3
1.3	Mock Delivery .....	3
1.4	Background Noise Levels .....	3
1.5	Assessment .....	3
1.6	Conclusion.....	4
2	MOCK DELIVERY .....	5
2.1	Photographs.....	5
2.2	Methodology.....	5
2.3	Noise Results.....	5
2.4	Simulated Delivery .....	6
2.5	Residual Noise Levels .....	6
3	BACKGROUND NOISE LEVELS .....	7
3.1	7 Day Profile.....	7
3.2	Sunday Quietest ½ Hour Period .....	7
4	ASSESSMENTS.....	9
4.1	Comparison with Background.....	9
4.2	BS4142:1997 .....	9
4.3	General Amenity .....	9
5	CONCLUSIONS .....	10
5.1	Mock delivery.....	10
5.2	Background Noise Levels .....	10
5.3	Assessment .....	10
5.4	Conclusion.....	10
6	APPENDIX A .....	11
6.1	7 Day Background Noise Levels .....	11
6.2	Sunday Background Noise Levels.....	13
7	APPENDIX B – NOISE MAPS .....	14
7.1	Background Noise Levels – (Quietest ½ hour Sunday).....	14
7.2	Delivery (Same Period on Sunday).....	15
8	REFERENCE .....	16
8.1	Reference 1 - Planning and Policy Guidance 24.....	16
8.2	Reference 2 - British Standard 4142:1997 .....	16
8.3	Reference 3 – Department of Transport (2004) .....	16
8.4	Reference 4 – Freight Transport Association .....	16



## **1 EXECUTIVE SUMMARY**

### **1.1 Introduction**

KR Associates (UK) Ltd ("KRA") have been instructed by Sager House (Hampstead) Ltd to undertake an environmental assessment at 37 - 63 Fortune Green Road, London to determine if deliveries to the A1, A3 and Gymnasium units at the site on a Sunday and Bank Holiday will have an adverse effect on the local amenity in terms of noise.

### **1.2 Planning Condition**

Planning permission for the multi use site was granted by Appeal APP/X5210/A/03/1135258 & 1151824 on 17<sup>th</sup> February 2005 and included condition 19 which states:

*"Deliveries to the gymnasium and Class A1 and A3 units shall only take place between 08:00 hrs and 20:00 hrs Monday to Saturday and not at all on Sundays or public holidays."*

### **1.3 Mock Delivery**

A typical rigid delivery truck was taken to the site early in the morning of 4<sup>th</sup> November 2009 and a 'mock delivery' undertaken to establish the noise emissions from deliveries. The measurements established the noise data from the key elements of the delivery.

### **1.4 Background Noise Levels**

Background noise levels were undertaken over a 7 day period from 26<sup>th</sup> September 2009 to 1<sup>st</sup> October 2009 including a Sunday to establish the underlying background noise levels against which the proposed delivery noise levels are assessed.

### **1.5 Assessment**

#### **1.5.1 Department for Transport Guidance**

When the noise from the delivery is compared against the underlying background noise levels the various noise indices are between -6 dB and -19 dB below the background noise levels.

#### **1.5.2 BS4142:1997**

An assessment in the general spirit of British Standard 4142:1997 results in a conclusion of -2 dB well below the levels of 'Complaints Marginal'.



## **1.6 Conclusion**

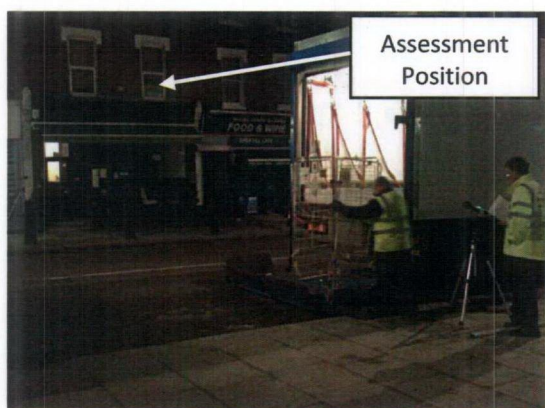
The noise emissions from the proposed deliveries on Sunday and Bank Holidays will not have an adverse effect and will be 'unlikely' to give rise to complaints if they are undertaken between 10:00 and 16:00 only.



## 2 MOCK DELIVERY

### 2.1 Photographs

View from Lorry towards Assessment Position



View from Assessment Position towards Lorry

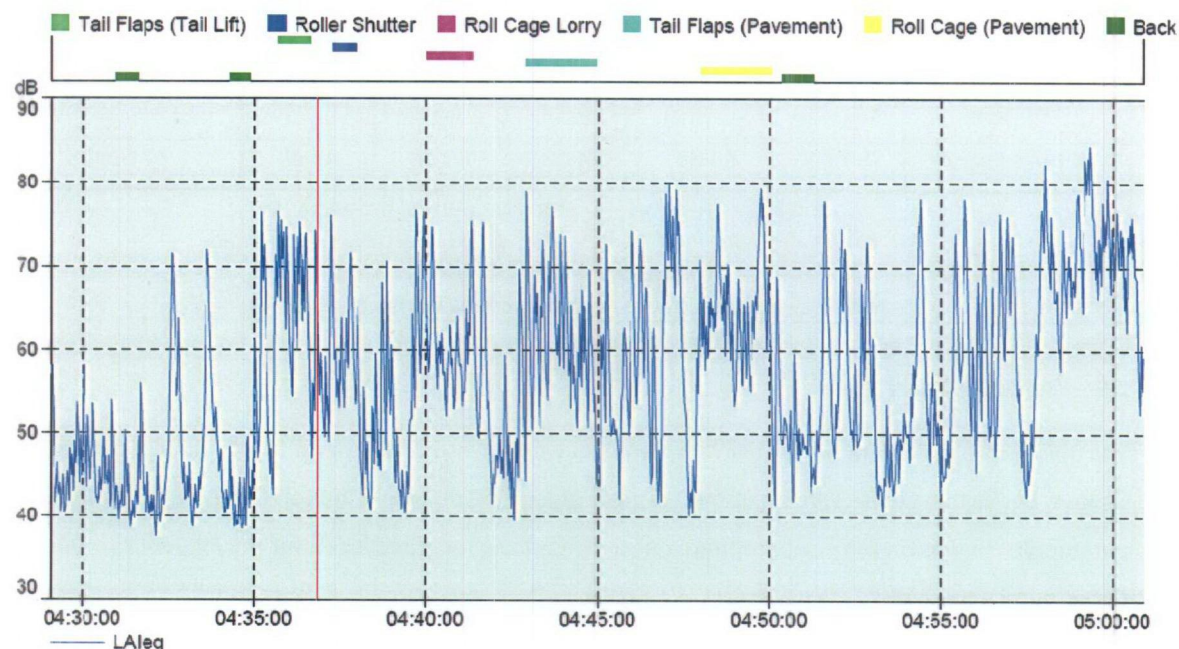


### 2.2 Methodology

A standard rigid delivery lorry was taken to the site and a simulated delivery undertaken during a very quiet period between 04:00 and 05:00 on 4<sup>th</sup> November 2009. The resultant noise levels for each key element of the delivery were measured external 1m from the facade of the first floor flat at 106a Fortune Green Road. These included the following elements

- Unfolding the tail lift from the vertical position and placing the tails flaps in the raised position.
- Opening / closing the roller shutter door on the rear of the lorry.
- Moving a roll cage within the lorry and onto / off the tail lift.
- Dropping of tail flaps onto the pavement.
- Movement of the roll cage between the lorry and the commercial units across the pavement.

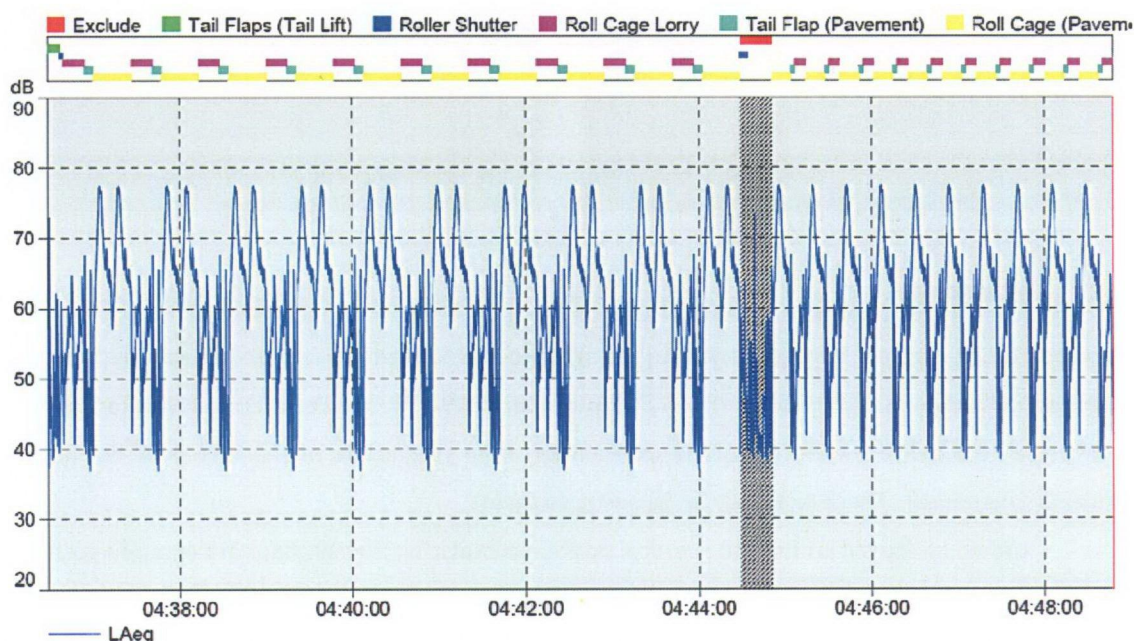
### 2.3 Noise Results



## 2.4 Simulated Delivery

The individual noise events which were measured at the nearest noise sensitive properties were combined to simulate the worst case scenario of a half hour delivery comprising of 20 full roll cage delivery and collection of 20 empty cages.

### 2.4.1 Noise Profile



### 2.4.2 Table of Results

The following is the resultant key noise levels for the worst case scenario for a ½ hour delivery.

Proposed Delivery	Resultant Noise Levels					No of Max Events <sup>*1</sup>
	L <sub>Aeq,30min</sub>	L <sub>Max30min</sub>	L <sub>A10,30min</sub>	L <sub>A50,30min</sub>	L <sub>A90,30min</sub>	L <sub>Max,30 minutes</sub> 66 dB
½ hr Delivery	69 dB	83 dB	74 dB	62 dB	45 dB	74 Events
Sound Pressure Level – 1 <sup>st</sup> floor residential property at 1m externally from the first floor flat at 106a Fortune Green Road Reference level $2 \times 10^{-5} \text{ Nm}^{-2}$ Note *1. Number of times level exceeds values of 66 dB (A)						

## 2.5 Residual Noise Levels

The noise emissions from the key delivery elements were measured between 04:00 and 05:00 when the various background noise levels parameters were at least 10 dB below the corresponding delivery noise parameters. It was therefore appropriate not to correct the recorded levels for the influence to the background noise levels.







### 3.2.2 Table of Results

Quietest Period	Resultant Noise Levels					No of Max Events <sup>*1</sup>
	L <sub>Aeq,30min</sub>	L <sub>Max30min</sub>	L <sub>A10,30min</sub>	L <sub>A50,30min</sub>	L <sub>A90,30min</sub>	L <sub>Aeq, 30 minutes</sub> 66 dB
10:00 to 10:30 ½ hr Delivery	77 dB	91 dB	80 dB	73 dB	66 dB	162 Events
Sound Pressure Level – 1 <sup>st</sup> floor residential property opposite site. Reference level $2 \times 10^{-5} \text{ Nm}^{-2}$						



## 4 ASSESSMENTS

### 4.1 Comparison with Background

The proposed deliveries on Sundays are compared against the quietest ½ hour background noise levels when the deliveries will take place in line with Department for Transport Guidance.

Quietest Period	Resultant Noise Levels				
	L <sub>Aeq,30min</sub>	L <sub>Max30min</sub>	L <sub>A10,30min</sub>	L <sub>A50,30min</sub>	L <sub>A90,30min</sub>
½ hr Delivery	69 dB	83 dB	74 dB	62 dB	45 dB
Quietest Background Noise Levels	77 dB	91 dB	80 dB	73 dB	66 dB
Increase	-8 dB	- 8 dB	-6 dB	-9 dB	-19 dB

### 4.2 BS4142:1997

The following is an assessment in line with the general spirit of BS4142:1997.

Source Position Assessment Position Background Position	Simulated ½ delivery – Lorry on Fortune Green Road 1m from the first floor window of 106a Fortune Green Road. Background noise levels were recorded at the assessment position.		
Item	Calculation	Clause	Commentary
Measured Delivery Noise Level	L <sub>Aeq,30 min</sub> 69 dB	6.3.13	T <sub>m</sub> < T <sub>r</sub> and T <sub>o</sub> < T <sub>r</sub>
Specific Noise Level	L <sub>Aeq,1 hour</sub> 66 dB	6.3	Correction for ½ delivery within 1 hour reference time period i.e. 69 - 3 = 66 dB
Acoustic feature correction	+0 dB	8.2.	At the assessment position the source levels will not significantly increase the number of maximum events.
Rating Level	L <sub>Aeq,1 hour</sub> 66 dB	8.3.	The acoustic feature correction is added to the specific noise level.
Background Noise Level	L <sub>A90,1 hour</sub> 66 dB	7.1.	The background noise level was measured at an appropriate position.
Excess of Rating over Background Level	<b>-0 dB</b>	9	The background levels is subtracted from the rating level. (Numerical values)
Assessment indicated complaint are Well below 'Complaints Marginal'		9	The excess of rating over the background is compared against BS4142:1997.

### 4.3 General Amenity

By undertaking deliveries on a Sunday only within a period when people are very unlikely to be sleeping the overall impact will be reduced. Furthermore, in the Fortune Green Road area the general background noise levels from road, rail and general activity are high after 09:00 on a Sunday.



## **5 CONCLUSIONS**

### **5.1 Mock delivery**

The noise emissions from an actual delivery were measured at the nearest noise sensitive property and used to calculate the noise emissions from a typical full delivery.

### **5.2 Background Noise Levels**

The existing noise climate was measured and a typical profile of the existing levels on a Sunday was Established.

### **5.3 Assessment**

The proposed noise levels from the Sunday deliveries were then assessed against the background noise levels.

### **5.4 Conclusion**

It is concluded that deliveries undertaken between 10:00 and 16:00 on Sundays and Bank Holiday will result in acceptable noise levels and the application to vary condition 19 of Appeal decision dated 17<sup>th</sup> February 2005 should be granted.

Consideration should be given to the inclusion of the following conditions.

#### **5.4.1 Arrival at Site**

The proposed delivery window should include lorries arriving at site to ensure lorries do not arrive early.

## 6 APPENDIX A

### 6.1 7 Day Background Noise Levels

Friday		Saturday		Sunday	
Date	L <sub>A90,1hr</sub>	Date	L <sub>A90,1hr</sub>	Date	L <sub>A90,1hr</sub>
25/09/2009 11:00	73.4	26/09/2009 00:00	57.6	27/09/2009 00:00	61.3
25/09/2009 12:00	72.3	26/09/2009 01:00	53.5	27/09/2009 01:00	56.5
25/09/2009 13:00	72.6	26/09/2009 02:00	52.1	27/09/2009 02:00	55.9
25/09/2009 14:00	71.0	26/09/2009 03:00	51.8	27/09/2009 03:00	54.1
25/09/2009 15:00	72.7	26/09/2009 04:00	51.5	27/09/2009 04:00	54.5
25/09/2009 16:00	72.2	26/09/2009 05:00	55.0	27/09/2009 05:00	55.1
25/09/2009 17:00	74.0	26/09/2009 06:00	57.9	27/09/2009 06:00	57.8
25/09/2009 18:00	75.0	26/09/2009 07:00	61.0	27/09/2009 07:00	58.2
25/09/2009 19:00	70.6	26/09/2009 08:00	65.9	27/09/2009 08:00	60.6
25/09/2009 20:00	67.4	26/09/2009 09:00	67.9	27/09/2009 09:00	65
25/09/2009 21:00	64.0	26/09/2009 10:00	70.9	27/09/2009 10:00	66.5
25/09/2009 22:00	63.0	26/09/2009 11:00	69.4	27/09/2009 11:00	67.5
25/09/2009 23:00	61.0	26/09/2009 12:00	71.8	27/09/2009 12:00	68.8
		26/09/2009 13:00	72.4	27/09/2009 13:00	70.1
		26/09/2009 14:00	69.1	27/09/2009 14:00	69
		26/09/2009 15:00	69.0	27/09/2009 15:00	66.3
		26/09/2009 16:00	71.1	27/09/2009 16:00	68
		26/09/2009 17:00	70.1	27/09/2009 17:00	68.9
		26/09/2009 18:00	69.6	27/09/2009 18:00	67.5
		26/09/2009 19:00	68.8	27/09/2009 19:00	65.0
		26/09/2009 20:00	69.3	27/09/2009 20:00	64.7
		26/09/2009 21:00	66.3	27/09/2009 21:00	65.5
		26/09/2009 22:00	64.1	27/09/2009 22:00	62.6
		26/09/2009 23:00	62.4	27/09/2009 23:00	57.3





Background Noise Levels Continued...

Monday		Tuesday		Wednesday	
Date	L <sub>A90,1hr</sub>	Date	L <sub>A90,1hr</sub>	Date	L <sub>A90,1hr</sub>
28/09/2009 00:00	51.8	29/09/2009 00:00	53.4	30/09/2009 00:00	54.6
28/09/2009 01:00	49.8	29/09/2009 01:00	50.2	30/09/2009 01:00	49.9
28/09/2009 02:00	49	29/09/2009 02:00	49.3	30/09/2009 02:00	48.6
28/09/2009 03:00	48.5	29/09/2009 03:00	49	30/09/2009 03:00	47.8
28/09/2009 04:00	49.6	29/09/2009 04:00	51.6	30/09/2009 04:00	48.6
28/09/2009 05:00	51.5	29/09/2009 05:00	53.8	30/09/2009 05:00	51.2
28/09/2009 06:00	60.1	29/09/2009 06:00	60.7	30/09/2009 06:00	58.1
28/09/2009 07:00	67.7	29/09/2009 07:00	69.1	30/09/2009 07:00	69.8
28/09/2009 08:00	74.5	29/09/2009 08:00	77.6	30/09/2009 08:00	73.4
28/09/2009 09:00	76.7	29/09/2009 09:00	72.8	30/09/2009 09:00	71.9
28/09/2009 10:00	72.1	29/09/2009 10:00	71.5	30/09/2009 10:00	70.5
28/09/2009 11:00	73	29/09/2009 11:00	73.3	30/09/2009 11:00	75.9
28/09/2009 12:00	72.1	29/09/2009 12:00	73.1	30/09/2009 12:00	75.4
28/09/2009 13:00	73.3	29/09/2009 13:00	73.6	30/09/2009 13:00	71.8
28/09/2009 14:00	73.2	29/09/2009 14:00	72.4	30/09/2009 14:00	71.3
28/09/2009 15:00	74	29/09/2009 15:00	71.4	30/09/2009 15:00	78.8
28/09/2009 16:00	74.9	29/09/2009 16:00	72.9	30/09/2009 16:00	80.3
28/09/2009 17:00	74	29/09/2009 17:00	75.5	30/09/2009 17:00	78.8
28/09/2009 18:00	71.4	29/09/2009 18:00	71.4	30/09/2009 18:00	70.6
28/09/2009 19:00	70.1	29/09/2009 19:00	69.8	30/09/2009 19:00	69.1
28/09/2009 20:00	65.2	29/09/2009 20:00	66.8	30/09/2009 20:00	65.1
28/09/2009 21:00	65.0	29/09/2009 21:00	64.9	30/09/2009 21:00	62.9
28/09/2009 22:00	63.5	29/09/2009 22:00	64.2	30/09/2009 22:00	62.8
28/09/2009 23:00	56.5	29/09/2009 23:00	59.2	30/09/2009 23:00	59.4

Thursday					
Date	L <sub>A90,1hr</sub>	Date	L <sub>A90,1hr</sub>	Date	L <sub>A90,1hr</sub>
01/10/2009 00:00	54.7	01/10/2009 04:00	50.3	01/10/2009 08:00	80.8
01/10/2009 01:00	51.3	01/10/2009 05:00	52.7	01/10/2009 09:00	79.7
01/10/2009 02:00	48.2	01/10/2009 06:00	60	01/10/2009 10:00	78.8
01/10/2009 03:00	49.3	01/10/2009 07:00	69.2		

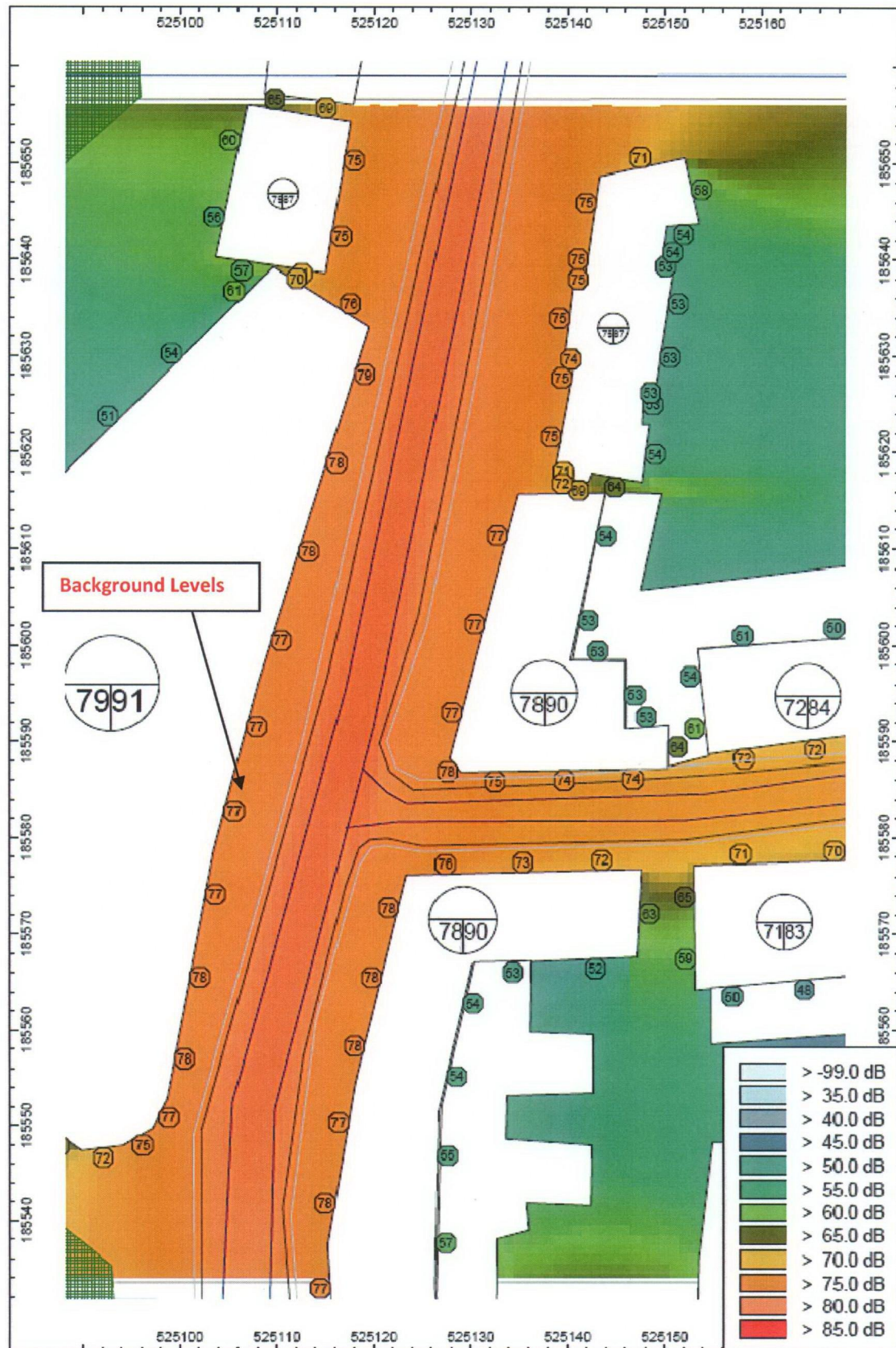
## 6.2 Sunday Background Noise Levels

	Sunday	
Date	L <sub>Aeq,1hr</sub>	L <sub>A90,1hr</sub>
27/09/2009 09:00	74	65
27/09/2009 10:00	77	66
27/09/2009 11:00	78	67
27/09/2009 12:00	79	69
27/09/2009 13:00	82	70
27/09/2009 14:00	81	69
27/09/2009 15:00	78	66
27/09/2009 16:00	79	68
27/09/2009 17:00	75	69
27/09/2009 18:00	76	67
27/09/2009 19:00	74	65



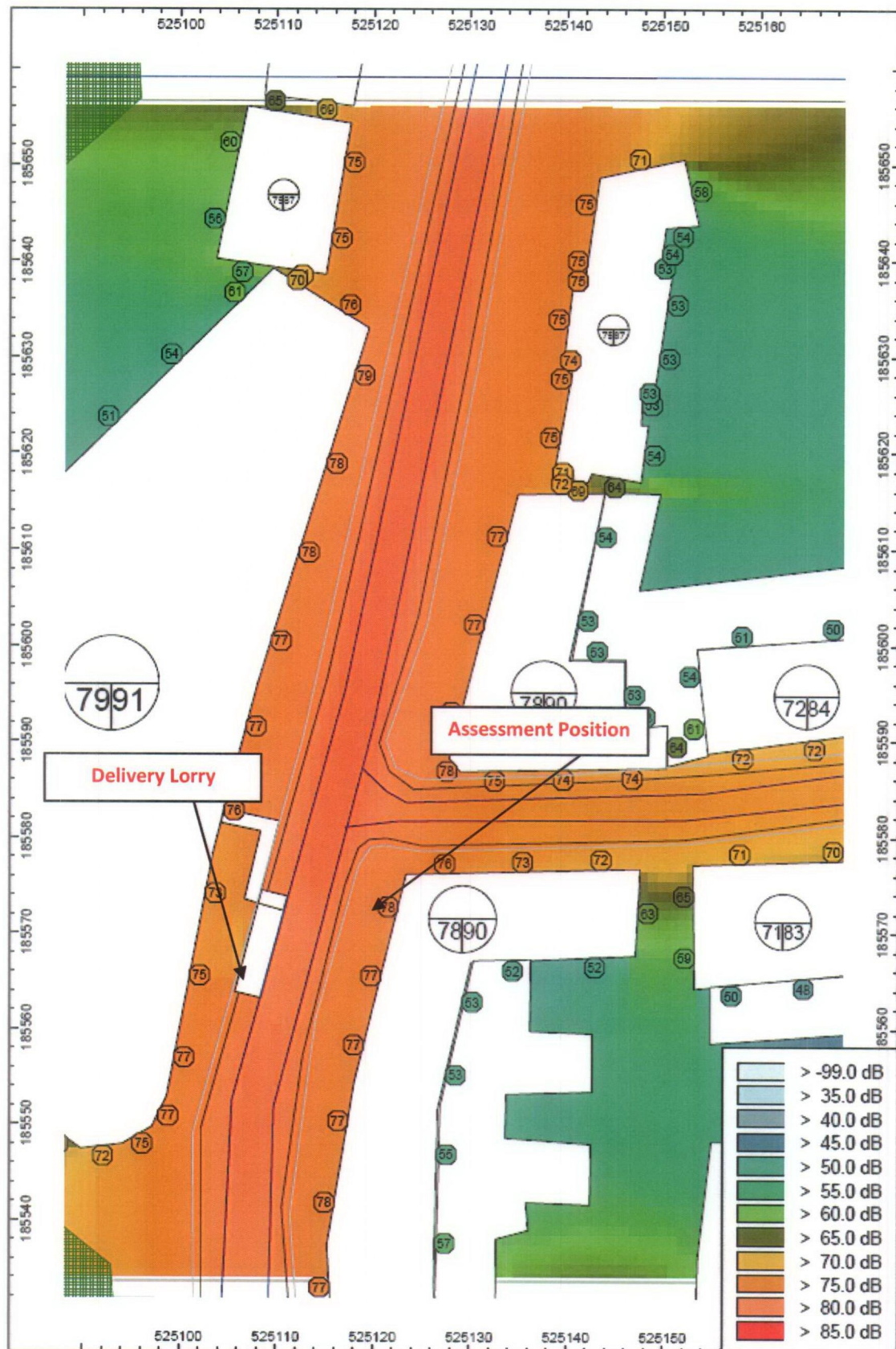
## 7 APPENDIX B – NOISE MAPS

### 7.1 Background Noise Levels – (Quietest ½ hour Sunday)





## 7.2 Delivery (Same Period on Sunday)



## **8 REFERENCE**

### **8.1 Reference 1 - Planning and Policy Guidance 24**

Planning and Noise.

#### **8.1.1 Summary**

*"PPG 24 guides local authorities in England on the use of their planning powers to minimise the adverse impact of noise. It outlines the considerations to be taken into account in determining planning applications both for noise sensitive developments and for those activities which generate noise."*

### **8.2 Reference 2 - British Standard 4142:1997**

Method for Rating industrial noise affecting mixed residential and industrial areas.

#### **8.2.1 Scope**

*"This British Standard described methods for determining at the outside of a building:*

- a) Noise levels from factories or industrial premises, or fixed installation, or sources of an industrial nature in commercial premises; and*
- b) Background noise levels*

*The standard also describes a method for assessing whether noise referred to in a) is likely to give rise to complaints from people residing within the building."*

### **8.3 Reference 3 – Department of Transport (2004)**

Delivering the goods: Guidance on delivery restrictions.

#### **8.3.1 Scope**

*" Help and inform anyone with an interest in deliveries including industry, local authorities and the public...[and] Provide a guide to existing central and local government policy and a concise overview of regulation in one convenient document."*

### **8.4 Reference 4 – Freight Transport Association**

A Toolkit for improving night-time deliveries

#### **8.4.1 Scope – Part 3**

*"This document provides guidance to those concerned with assessing the potential noise impact of retail deliveries in residential areas that might occur...."*