ENVIRONMENTAL NOISE ASSESSMENT FOR PLANNING PURPOSES

at

Five Sites Within
Warwick District

for

Warwick District Council

July / August 2014
Ref: rdbst3620

Contents

Objective

To undertake environmental noise surveys at five sites within the Warwick District in an attempt to establish background and ambient noise levels and predict potential impacts for planning and development purposes.

Circulation

One bound copy of the report to the client plus pdf files.

1. Background

1.1 On the 15th of July I received the following request:

> Dear Sirs
>
> Warwick District Council is preparing its draft DPD on the provision of sites for Gypsies and Travellers. As a result of the consultation we held on the Preferred Options for sites, we now have three sites which we are considering allocating, but all three have been queried with reference to noise from adjacent roads / businesses. We would also like to know the implications of allowing some minor business uses on the site itself (storage / light industrial uses) on the surrounding area.
>
> This work is very urgent as the report has to be with our committee for a pre-meeting briefing on 28 July.
>
> If you think that you could produce a report within this timescale which would give us the information we need to decide if this issue would affect the choice of sites, please let me know with a price so that we can get things moving.
>
> There are three sites, all within the south of our district and these would be small, taking 5-15 pitches each. I can let you have maps, but the information is confidential at this stage so we would need to know that the sites would remain so.
>
> Thank you
> Kind regards
> Lorna Coldicott
> Senior Planner

1.2 This was subsequently extended to include two additional sites.

1.3 The type of assessment required in these circumstances should be carried out at the position of the proposed development for a minimum of 24 hours. These are quite large sites, however, and as a result it would be usual to take readings in more than one position to establish how the levels fluctuate according to position.

1.4 This type of survey is also invariably fraught with other difficulties relating to the weather, security, access to the site, interference from other sources etc. Needless to say if data was to be obtained in the short time period available there would have to be some compromises. There were and these are explained further in the main text.

THE SITES

1.5 The five sites are all dominated by noise from passing traffic. I have included copies of plans and Google Earth images at Appendix 1.

a) GT04 LAND AT HARBURY LANE - This is the current Leamington Football Club site which is constantly in use. The car park is used by staff of the National Grid who have offices on the technology park 3 miles away. A shuttle bus runs between the two sites. The north eastern edge is some 150m or so from the road but a verbal request was made to undertake the readings close to the road in an area not screened by buildings.

b) GT15 LAND EAST OF EUROPA WAY - This is currently unoccupied woodland with a frontage of approximately 225m by the roadside, extending 150 eastwards towards the back of the site. There is a gateway on the southern edge with a pathway between the trees to the east. It was felt that any development would not be concentrated on the western edge, therefore it was suggested that the survey concentrate more on the middle of the site. This was agreed.

c) GT19 OAKLANDS FARM BIRMINGHAM ROAD BUDBROOKE - The land in question is marked on the plan, outlined in orange as on the other two. However, a request was made to consider the whole site including the land and buildings to the east, but not the field. This site is approximately 200m east to west and about 50m - 80m deep (from the road to the canal).

d) LAND TO THE EAST OF STRATFORD ROAD WARWICK AREA 1 - This is an area of land immediately to south of the sewage works, currently in use by landscape and refuse disposal firms working for the local authority.

e) LAND TO THE EAST OF STRATFORD ROAD WARWICK AREA 2 - This is a larger area of land between Area 1 and the motorway.

1.6 Any survey would have to be undertaken on a weekday when the traffic would be at it's busiest. The week commencing the 21st of July was the only time available therefore the first three site surveys had to be undertaken then.

1.7 When the request was made for the two additional sites (d & e) these surveys had to be carried out during the week commencing the 4th of August.

2. Modus Operandi

2.1 A request has been made for environmental noise assessments to inform the current development plan. In March 2012 Planning Policy Guidance Note 24 entitled, *Planning and Noise*, was repealed and is therefore no longer available to guide us. It was replaced by the *National Planning Policy Framework* (NPPF) which I consider in more detail in Part 4 below.

2.2 Suffice to say there is no strict guidance as to how a noise assessment should be undertaken in these circumstances. Ideally measurements should be taken which are representative of the nearest noise sensitive façade on a day and at a time when environmental noise would be at its worst. The basic requirements of BS 7445, *Description and Measurement of Environmental Noise*, should of course, be taken into consideration.

2.3 The microphone must be protected from:

* Wind
* Rain, and
* Electrical interference

2.4 Strong winds or rain can create a lot of noise in the environment therefore it is better not to undertake surveys in adverse weather conditions. Monitoring positions and weather must be recorded.

2.5 Fortunately conditions were excellent with some light winds and no precipitation at all throughout both weeks.

2.6 The aim has been to obtain representative background and ambient noise levels at each of the three sites on a busy weekday when traffic flows would be high.

MICROPHONE POSITIONS

2.7 These are indicated on the Google Earth images at Appendix 1 and the photographs are Appendix 2.

2.8 GT04 - As the car park is in constant use a location in the southern corner was used. Whilst it was considered perhaps the quietest roadside location (from the point of view of onsite noise), there was still quite a bit of activity from vehicles, workmen and other individuals.

2.9 GT15 - The land falls away to the east affording greater screening from traffic noise. A primary monitoring position was chosen approximately 35m down the path heading east, and 25m in from the southern boundary. A secondary position was also chosen at the top of the bank next the entrance gate close to the road. Two days monitoring was undertaken on this site due delays in obtaining permission to access GT04.

2.10 GT19 - It was considered the worst case would be assured on the western end of the site picking up noise from Ugly Bridge Road as well as the Birmingham Road.

2.11 STRATFORD ROAD WARWICK AREA 1 - As the site was in constant use during the day it was agreed to undertake the monitoring at a mid point close to the southern boundary to minimise the impact of contractors vehicles.

2.12 STRATFORD ROAD WARWICK AREA 2 - This is a large site and it is necessary to understand the noise impact of the motorway from north to south. As only one day was available it was agreed to undertake the 24 hour monitoring approximately 100m from the motorway, and then undertake spot readings for two hours each at 4 other locations to give a clear indication of levels at 200 and 400m distant.

3. Results

3.1 A full read out of the monitoring equipment is shown on the following pages. Firstly the hourly data is shown in tabular form, then as a graph. They have been produced in the order that they were carried out.

3.2 The *Categories* noted on the spread sheet data relate to old PPG24 NECs (see Appendix 5).

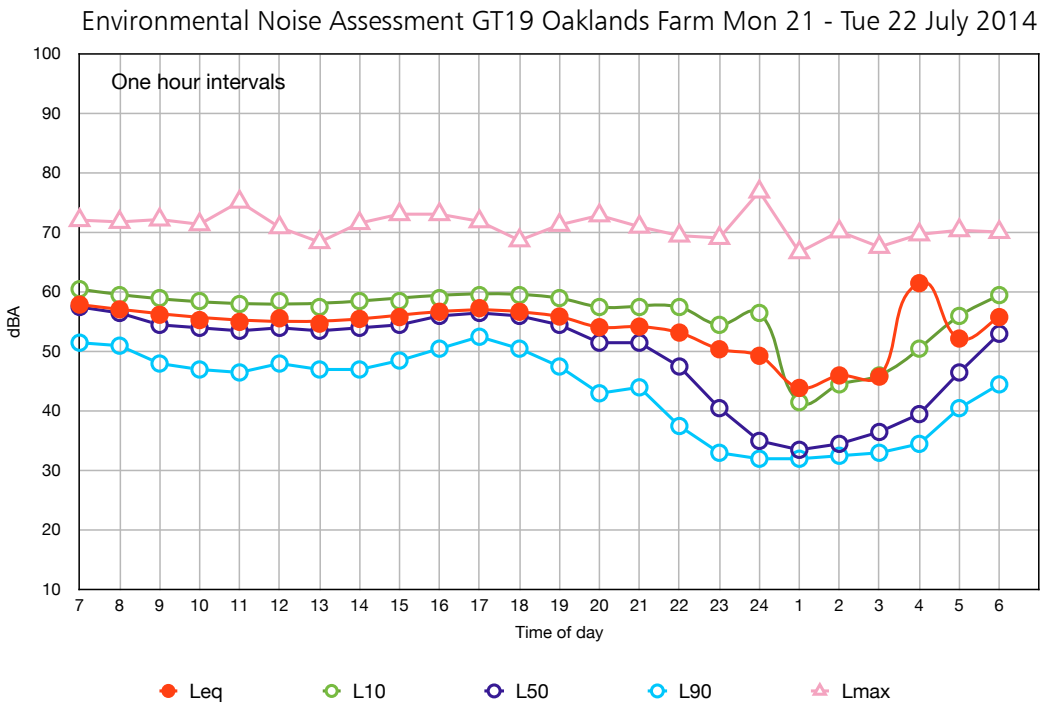
3.3 The pale blue line is the background noise level (L_{A90}) which is usually formed by the general hum of distant traffic. The pale pink are the L_{Amax} levels which are the highest levels recorded during each time period. If there aren't many of these they may not impact on the L_{Aeq} (red line) which records the 'ambient' noise. The green and blue lines are other percentile values which provide valuable information about the noise climate.

3.4 For a more detailed explanation of what each technical term in this part means see Appendix 6.

ENVIRONMENTAL NOISE ASSESSMENT Mon 21 - Tue 22 July 2014

GT19 Oaklands Farm

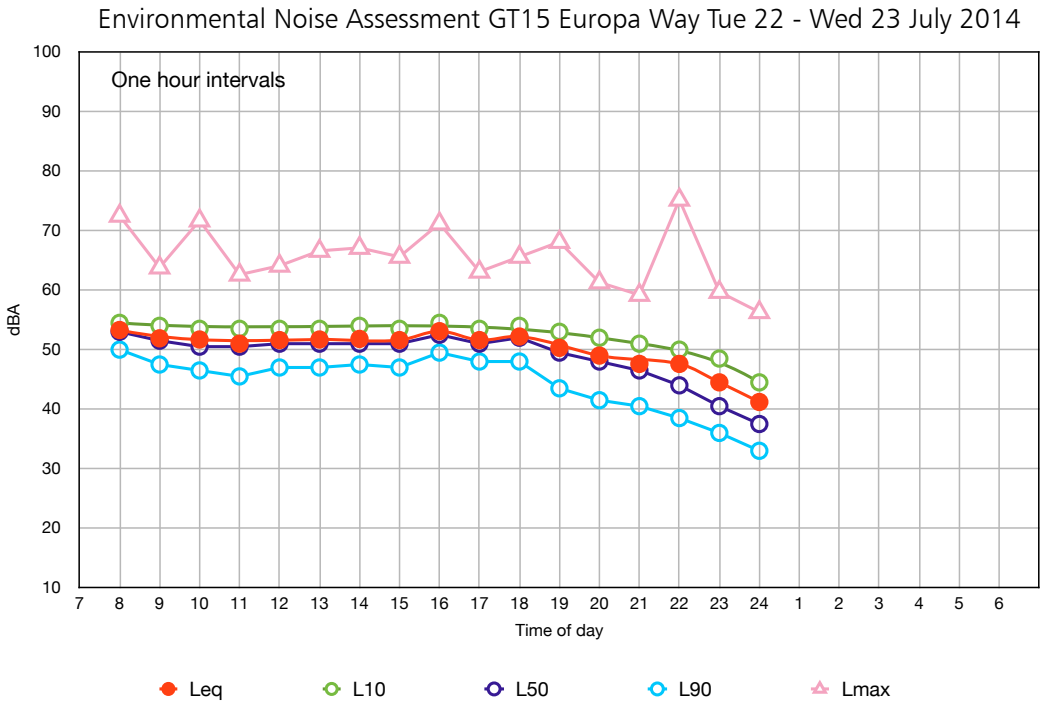
Start Time	**Leq**	L10	L50	L90	Lmax				
						Daytime			59.5
7	57.9	60.5	57.5	51.5	72.1	57.9			60.5
8	57.1	59.5	56.5	51.0	71.8	57.1			59.5
9	56.2	59.0	54.5	48.0	72.2	56.2			59.0
10	55.3	58.5	54.0	47.0	71.4	55.3			58.5
11	55.0	58.0	53.5	46.5	75.2	55.0			58.0
12	55.6	58.5	54.0	48.0	70.9	55.6			58.5
13	54.7	57.5	53.5	47.0	68.4	54.7			57.5
14	55.5	58.5	54.0	47.0	71.6	55.5			58.5
15	55.8	58.5	54.5	48.5	73.1	55.8			58.5
16	56.7	59.0	56.0	50.5	73.1	56.7			59.0
17	57.3	59.5	56.5	52.5	71.9	57.3			59.5
18	56.7	59.5	56.0	50.5	68.7	56.7			59.5
19	55.9	59.0	54.5	47.5	71.3	55.9			59.0
20	54.1	57.5	51.5	43.0	72.9	54.1			57.5
21	54.2	57.5	51.5	44.0	71.0	54.2			57.5
22	53.2	57.5	47.5	37.5	69.5	53.2	**Nightime**		57.5
23	50.4	54.5	40.5	33.0	69.1	**55.7**	50.4		54.5
24	49.3	56.5	35.0	32.0	76.9	**Category B**	49.3	**L10 18hr**	**58.44444444**
1	43.9	41.5	33.5	32.0	66.7		43.9		
2	46.0	44.5	34.5	32.5	70.2		46.0		
3	45.8	46.0	36.5	33.0	67.6		45.8		
4	61.5	50.5	39.5	34.5	69.7		61.5		
5	52.2	56.0	46.5	40.5	70.4		52.2		
6	55.8	59.5	53.0	44.5	70.1		55.8		
							50.6125		
							Category B		



ENVIRONMENTAL NOISE ASSESSMENT Tue 22 - Wed 23 July 2014

GT15 Europa Way 1

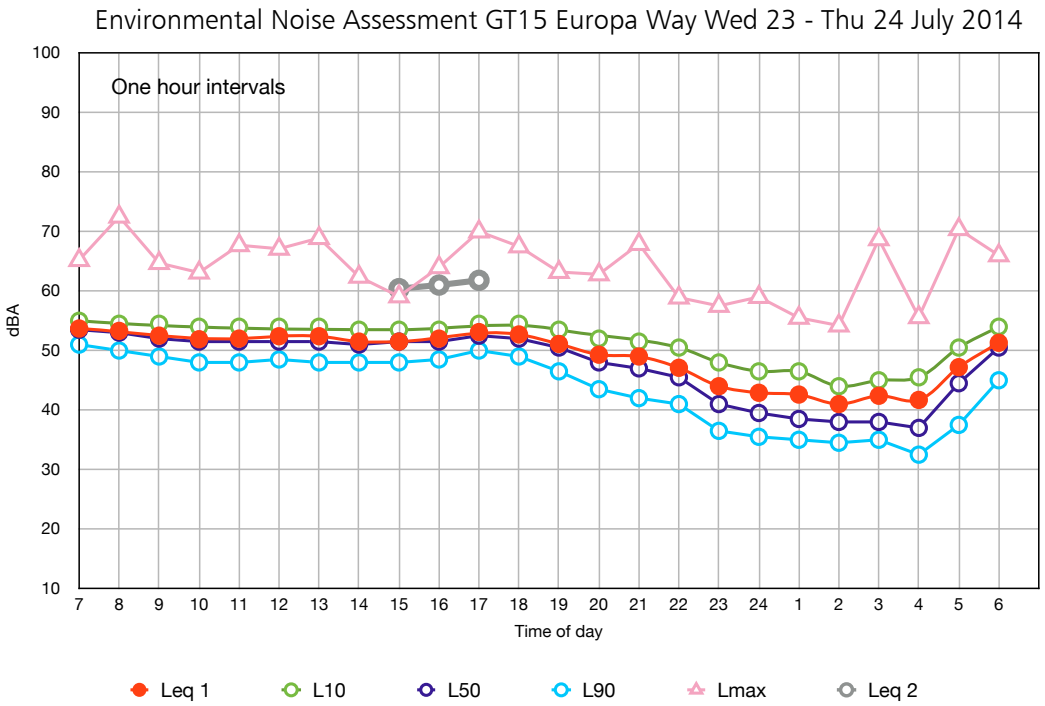
Start Time	**Leq**	L10	L50	L90	Lmax			
						Daytime		
7						53.7		
8	53.3	54.5	53.0	50.0	72.5	53.3		54.5
9	51.9	54.0	51.5	47.5	63.8	51.9		54.0
10	51.7	53.5	50.5	46.5	71.7	51.7		53.5
11	51.0	53.5	50.5	45.5	62.6	51.0		53.5
12	51.6	53.5	51.0	47.0	64.1	51.6		53.5
13	51.7	53.5	51.0	47.0	66.6	51.7		53.5
14	51.8	54.0	51.0	47.5	67.1	51.8		54.0
15	51.6	53.5	51.0	47.0	65.6	51.6		53.5
16	53.1	54.5	52.5	49.5	71.2	53.1		54.5
17	51.6	53.5	51.0	48.0	63.1	51.6		53.5
18	52.2	54.0	52.0	48.0	65.6	52.2		54.0
19	50.3	53.0	49.5	43.5	68.1	50.3		53.0
20	49.0	52.0	48.0	41.5	61.3	49.0		52.0
21	47.6	51.0	46.5	40.5	59.2	47.6		51.0
22	47.6	50.0	44.0	38.5	75.2	47.6		50.0
23	44.5	48.5	40.5	36.0	59.7	**51.23125**		48.5
24	41.2	44.5	37.5	33.0	56.3	**Category A**	**L10 16hr**	**52.90625**
1								
2								
3								
4								
5								
6								



ENVIRONMENTAL NOISE ASSESSMENT Wed 23 - Thu 24 July 2014

GT15 Europa Way 2

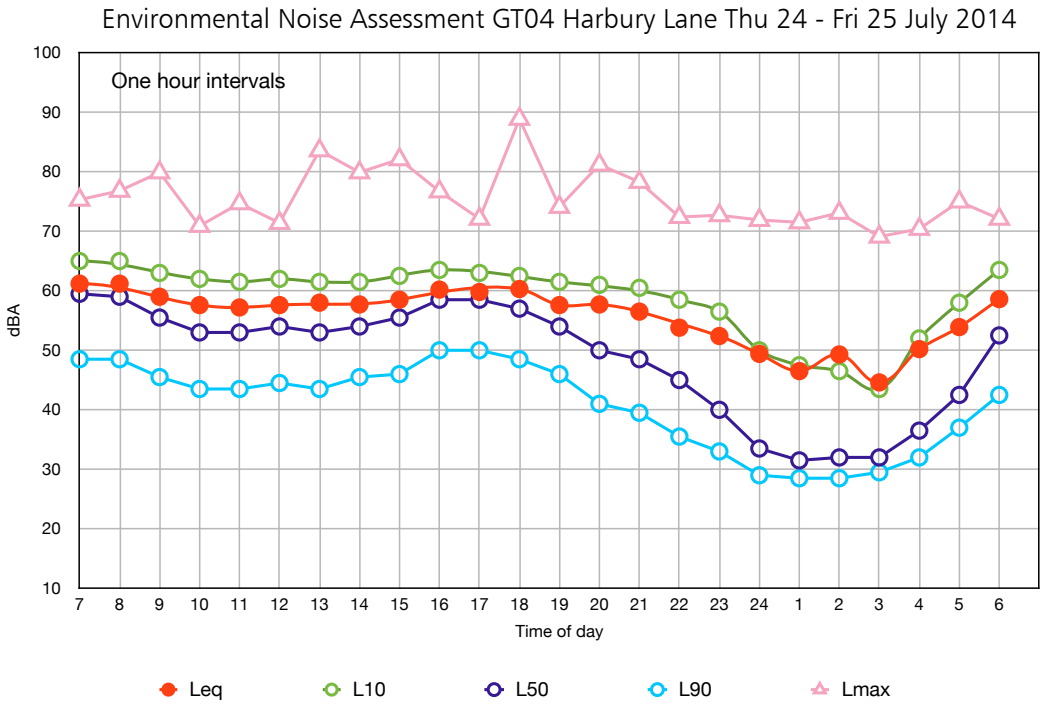
Start Time	**Leq1**	L10	L50	L90	Lmax	**Leq2**			
							Daytime		54.0
7	53.7	55.0	53.5	51.0	65.2		53.7		55.0
8	53.3	54.5	53.0	50.0	72.5		53.3		54.5
9	52.5	54.5	52.0	49.0	64.7		52.5		54.5
10	51.9	54.0	51.5	48.0	63.1		51.9		54.0
11	52.0	54.0	51.5	48.0	67.7		52.0		54.0
12	52.4	54.0	51.5	48.5	67.1		52.4		54.0
13	52.4	54.0	51.5	48.0	68.9		52.4		54.0
14	51.5	53.5	51.0	48.0	62.4		51.5		53.5
15	51.5	53.5	51.5	48.0	59.1	60.4	51.5		53.5
16	52.0	53.5	51.5	48.5	64.0	61.0	52.0		53.5
17	53.1	54.5	52.5	50.0	70.0	61.8	53.1		54.5
18	52.7	54.5	52.0	49.0	67.5		52.7		54.5
19	51.1	53.5	50.5	46.5	63.2		51.1		53.5
20	49.3	52.0	48.0	43.5	62.8		49.3		52.0
21	49.0	51.5	47.0	42.0	67.9		49.0		51.5
22	47.1	50.5	45.5	41.0	58.9		47.1	**Nightime**	50.5
23	44.0	48.0	41.0	36.5	57.5		**51.59375**	44.0	48.0
24	42.9	46.5	39.5	35.5	59.0		**Category A**	42.9	**53.277777777**
1	42.6	46.5	38.5	35.0	55.5			42.6	
2	41.0	44.0	38.0	34.5	54.2			41.0	
3	42.4	45.0	38.0	35.0	68.7			42.4	
4	41.7	45.5	37.0	32.5	55.6			41.7	
5	47.2	50.5	44.5	37.5	70.4			47.2	
6	51.3	54.0	50.5	45.0	66.0			51.3	
								44.1375	
								Category A	



ENVIRONMENTAL NOISE ASSESSMENT Thu 24 - Fri 25 July 2014

GT04 Harbury Lane

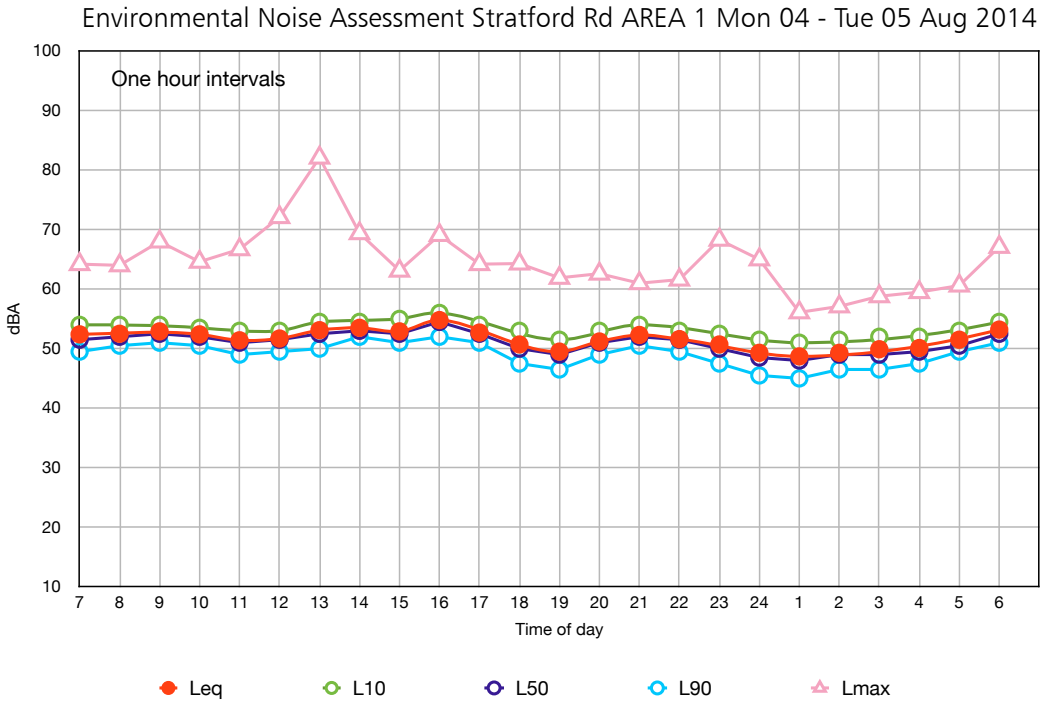
Start Time	**Leq**	L10	L50	L90	Lmax				
						Daytime			63.5
7	61.2	65.0	59.5	48.5	75.3	61.2			65.0
8	61.2	65.0	59.0	48.5	76.8	61.2			65.0
9	59.0	63.0	55.5	45.5	79.9	59.0			63.0
10	57.6	62.0	53.0	43.5	70.9	57.6			62.0
11	57.2	61.5	53.0	43.5	74.7	57.2			61.5
12	57.6	62.0	54.0	44.5	71.4	57.6			62.0
13	58.0	61.5	53.0	43.5	83.6	58.0			61.5
14	57.7	61.5	54.0	45.5	79.9	57.7			61.5
15	58.5	62.5	55.5	46.0	82.1	58.5			62.5
16	60.2	63.5	58.5	50.0	76.7	60.2			63.5
17	59.8	63.0	58.5	50.0	72.1	59.8			63.0
18	60.3	62.5	57.0	48.5	88.9	60.3			62.5
19	57.6	61.5	54.0	46.0	74.1	57.6			61.5
20	57.7	61.0	50.0	41.0	81.2	57.7			61.0
21	56.5	60.5	48.5	39.5	78.3	56.5			60.5
22	53.8	58.5	45.0	35.5	72.4	53.8	**Nightime**		58.5
23	52.4	56.5	40.0	33.0	72.7	**58.36875**	52.4		56.5
24	49.4	50.0	33.5	29.0	71.9	**Category B**	49.4	**L10 18hr**	**61.823529411**
1	46.5	47.5	31.5	28.5	71.5		46.5		
2	49.3	46.5	32.0	28.5	73.1		49.3		
3	44.6	43.5	32.0	29.5	69.1		44.6		
4	50.2	52.0	36.5	32.0	70.4		50.2		
5	53.9	58.0	42.5	37.0	75.0		53.9		
6	58.6	63.5	52.5	42.5	72.1		58.6		
							50.6125		
							Category B		



ENVIRONMENTAL NOISE ASSESSMENT Mon 4 - Tue 5 Aug 2014

Stratford Road Warwick - AREA 1

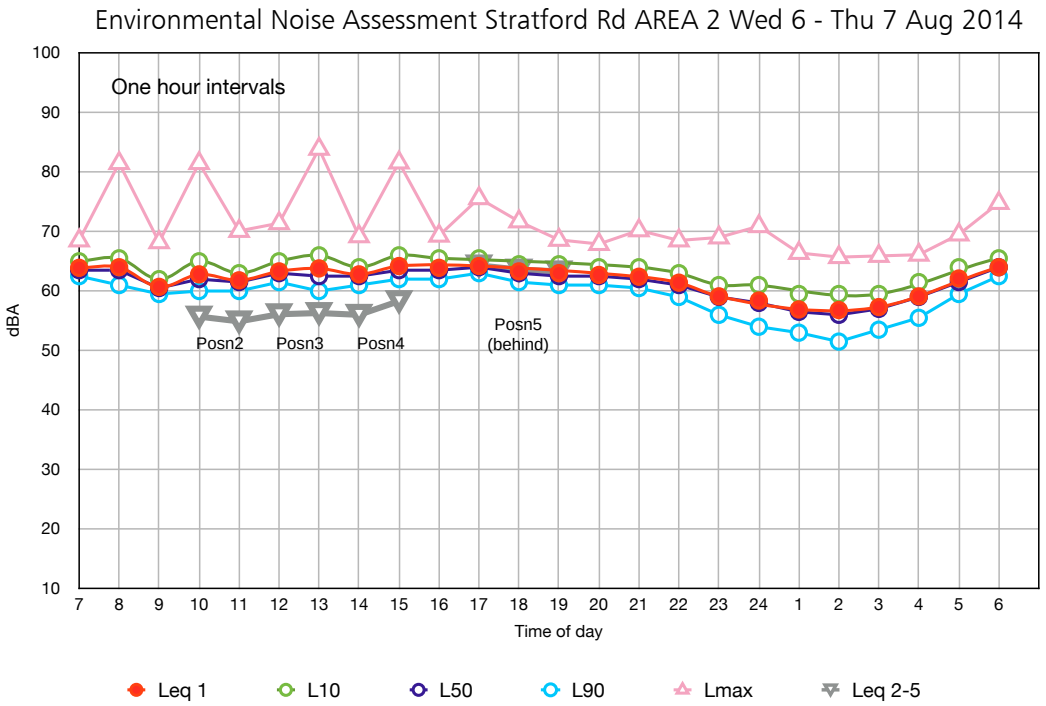
Start Time	**Leq**	L10	L50	L90	Lmax				
						Daytime			54.5
7	52.4	54.0	51.5	49.5	64.2	52.4			54.0
8	52.5	54.0	52.0	50.5	64.0	52.5			54.0
9	52.9	54.0	52.5	51.0	68.0	52.9			54.0
10	52.4	53.5	52.0	50.5	64.6	52.4			53.5
11	51.4	53.0	51.0	49.0	66.7	51.4			53.0
12	51.7	53.0	51.5	49.5	72.1	51.7			53.0
13	53.1	54.5	52.5	50.0	82.1	53.1			54.5
14	53.5	54.5	53.0	52.0	69.4	53.5			54.5
15	52.9	55.0	52.5	51.0	63.1	52.9			55.0
16	54.8	56.0	54.5	52.0	69.1	54.8			56.0
17	52.7	54.0	52.5	51.0	64.2	52.7			54.0
18	50.7	53.0	50.0	47.5	64.3	50.7			53.0
19	49.5	51.5	49.0	46.5	61.9	49.5			51.5
20	51.2	53.0	51.0	49.0	62.6	51.2			53.0
21	52.3	54.0	52.0	50.5	61.0	52.3			54.0
22	51.6	53.0	51.5	49.5	61.6	51.6	**Nightime**		53.0
23	50.7	52.5	50.0	47.5	68.3	**52.225**	50.7		52.5
24	49.3	51.5	48.5	45.5	65.0	**Category A**	49.3	**L10 18hr**	**53.722222222**
1	48.7	51.0	48.0	45.0	56.1		48.7		
2	49.3	51.5	49.0	46.5	57.1		49.3		
3	49.9	52.0	49.0	46.5	58.8		49.9		
4	50.1	52.0	49.5	47.5	59.5		50.1		
5	51.5	53.0	50.5	49.5	60.6		51.5		
6	53.2	54.5	52.5	51.0	67.1		53.2		
							50.3375		
							Category B		

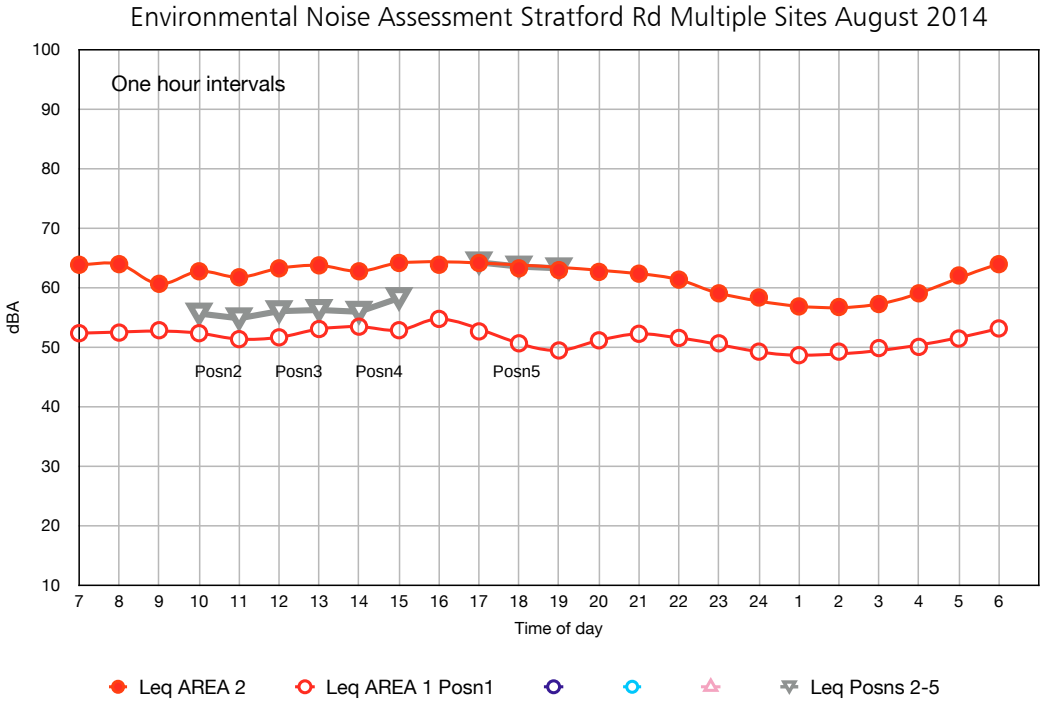


ENVIRONMENTAL NOISE ASSESSMENT Wed 6 - Thu 7 August 2014

Stratford Road Warwick AREA 2

Start Time	**Leq 1**	L10	L50	L90	Lmax	**Leq 2-5**			
							Daytime		65.5
7	63.9	65.0	63.5	62.5	68.5		63.9		65.0
8	64.0	65.5	63.5	61.0	81.5		64.0		65.5
9	60.7	62.0	60.5	59.5	68.2		60.7		62.0
10	62.8	65.0	62.0	60.0	81.5	55.7	62.8		65.0
11	61.8	63.0	61.5	60.0	70.1	54.9	61.8		63.0
12	63.3	65.0	63.0	61.5	71.4	56.1	63.3		65.0
13	63.8	66.0	62.5	60.0	83.9	56.3	63.8		66.0
14	62.8	64.0	62.5	61.0	69.2	56.0	62.8		64.0
15	64.2	66.0	63.5	62.0	81.6	58.3	64.2		66.0
16	63.9	65.5	63.5	62.0	69.3		63.9		65.5
17	64.2	65.5	64.0	63.0	75.6	64.3	64.2		65.5
18	63.3	64.5	63.0	61.5	71.7	63.6	63.3		64.5
19	63.0	64.5	62.5	61.0	68.6	63.3	63.0		64.5
20	62.7	64.0	62.5	61.0	67.9		62.7		64.0
21	62.4	64.0	62.0	60.5	70.2		62.4		64.0
22	61.4	63.0	61.0	59.0	68.5		61.4	**Nightime**	63.0
23	59.1	61.0	59.0	56.0	69.0		**63.0125**	59.1	61.0
24	58.4	61.0	58.0	54.0	70.9		**Category B**	58.4	**64.388888888**
1	56.9	59.5	56.5	53.0	66.4			56.9	
2	56.8	59.5	56.0	51.5	65.7			56.8	
3	57.3	59.5	57.0	53.5	65.9			57.3	
4	59.1	61.5	59.0	55.5	66.1			59.1	
5	62.1	64.0	61.5	59.5	69.5			62.1	
6	64.0	65.5	64.0	62.5	74.8			64.0	
								59.2125	
								Category C	




Environmental Noise Assessment Stratford Rd Multiple Sites August 2014
One hour intervals
dBA
100
90
80
70
60
50
40
30
20
10
Posn2
Posn3
Posn4
Posn5
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 1 2 3 4 5 6
Time of day
Leq AREA 2
Leq AREA 1 Posn1
Leq Posns 2-5

4. Planning Guidance

4.1 The NPPF[1] states that Local Planning Authorities should:

> * Seek to minimise pollution.
>
> * Prevent both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of noise pollution.
>
> * Avoid noise from giving rise to significant adverse impacts on health and quality of life;
>
> * Mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise, including through the use of conditions;
>
> * Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them;
>
> * Ensure they do not not replace or duplicate unnecessarily, other appropriate controls.

4.2 I would suggest the guidance hinges on the matter of reasonableness. A balance has to be struck between the reasonable needs of the potential occupiers of these sites, and the reasonable demands of other residents to not have to suffer an unacceptable or significant loss of amenity.

4.3 Needless to say, in each case here the key factor is location. Are these the right locations for this type of development?

4.4 The often quoted words from the NPPF are, of course, ***significant adverse impacts on health and quality of life***. This phrase may have it's origins in nuisance case law. As a 'nuisance' professional for over 40 years, I have sat many hundreds of times and listened, quantified and assessed noise, and tried to come to a reasonable view as to whether, in the particular circumstances, the noise amounts to a statutory nuisance. Does it materially / seriously, interfere with personal comfort / well being / enjoyment, of the occupiers use of their home.

4.5 In Town & Country planning the word 'amenity' has historically been used and, in my experience, tends to mean something slightly different to nuisance. Perhaps allowing a stricter interpretation (where it suits the circumstances).

4.6 As I mentioned in 2.1 above PPG 24 has been repealed, but a new NPPG[2] was published in March this year which sought particularly to deal with the matter of "significance". This is

material planning guidance and must be taken into consideration by LPAs when considering their development plans. The guidance explains clearly when noise is relevant to planning.

4.7 To comply with the NPPF LPAs need to consider whether or not:

a *significant adverse effect* is occurring or is likely to occur;

an *adverse effect* is occurring or is likely to occur;

a good standard of amenity can be achieved.

4.8 Development will always have some impact. This view is supported by the Government in the PPG. It states that noise should not be considered in isolation, separately from the *economic*, *social* and other *environmental* dimensions of the proposed development. Ideally there should be benefits across all three.

4.9 What is harm in noise terms? This is clearly defined. The PPG states that a *Significant Observed Adverse Effect Level* (SOAEL) would be both noticeable and disruptive and describes it as follows:

The noise causes a material change in behaviour and / or attitude, eg avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed for most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening an difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.

Action required - avoid

4.10 The *Observed Adverse Effect Level* (OAEL) is described as:

Noise can be heard and causes small changes in behaviour and / or attitude, eg turning up the television; speaking more loudly; where there is no alternative ventilation, having to keep windows closed for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.

Action required - mitigate and reduce to a minimum

4.11 The *No Observed Adverse Effect Level* (NOAEL) is described as:

Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly effect the acoustic character of the area but not such that there is a perceived change in the quality of life.

Action required - none (noise need not be a determining factor in planning applications).

STATUTORY NUISANCE

4.12 The NPPF states:

Recognise that development will often create some noise …. subject to the provisions of the Environmental Protection Act 1990 and other relevant law.

4.13 The Planning Practice Guidance on noise states:

Noise can constitute a statutory nuisance and is subject to the Environmental Protection Act 1990 and other relevant law. This includes noise affecting balconies and gardens.

OTHER MATTERS

4.14 The PPG states that noise impact may be partially "off set" if the residents of dwellings have access to:

a relatively quiet façade as part of their dwelling;
a relatively quiet amenity space for their sole use (eg a garden or balcony);
a relatively quiet amenity space for shared use;
a relatively quiet public park or green space nearby (eg within 5 minutes).

TRANQUILITY

4.15 The NPPF states *inter alia* at para123 - LPAs should aim to:

identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

4.16 This is a matter that is directly dealt with in the PPG on Noise:

There are no precise rules, but for an area to be protected for its tranquillity it is likely to be relatively undisturbed by noise from human sources that undermine the intrinsic character of the area. Such areas are likely to be already valued for their tranquillity, including the ability to perceive and enjoy the natural soundscape, and are quite likely to be seen as special for other reasons including their landscape.

4.17 Below are a list of the types of areas which may be considered "special" in the NPPF:

Special Areas of Conservation
Special Protection Areas
Ramsar Sites
Sites of Special Scientific Interest
Local Wildlife Sites
Nature Improvement Areas
Priority Habitats and Species
(as included in the England Biodiversity List published by the SoS under s41 of the NE&RC Act 2006)

4.18 Needless to say, being close to busy roads none of these sites could be considered as "areas of tranquillity" for the purposes of the NPPF.

OTHER GUIDANCE

PPG24

4.19 If I may, I would like to place the advice on transport noise from the old PPG24 into this category as it is still widely used by noise professionals in circumstances like these in the absence of anything to replace it. I will leave it to planning professionals to decide what value, if any, to place on it.

4.20 PPG 24 was particularly useful when assessing transport noise in that it identified 4 *Noise Exposure Categories* or *NECs*. These were as follows:

4.21 Category A - $<$55 dBA day time
- $<$45 dBA night time

Advice - Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.

4.22 Category B - 55 - 63 dBA day time
- 45 - 57 dBA night time

Advice - Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise.

4.23 Category C - 63 - 72 dBA day time
- 57 - 66 dBA night time

Advice - Planning permission should not normally be granted. Where it is considered that permission should be given, for example because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.

4.24 Category D - $>$ 72 dBA day time
- $>$ 66 dBA night time

Advice - Planning permission should normally be refused.

NOISE INSULATION REGULATIONS 1975

4.25 These Regulations specified a 'relevant noise level' for entitlement to noise insulation treatment. This was 68 dB $L_{A10\ 18hr}$. I have included this data on the spread sheets for information.

BS 8233 1999
SOUND INSULATION & NOISE REDUCTION FOR BUILDINGS - Code of Practice

4.26 This Code of Practice suggest limits for indoor ambient noise levels for various types of rooms and buildings. For habitable rooms resting / sleeping conditions are as follows:

	GOOD	REASONABLE
Living Rooms	30 dBA	40 dBA
Bedrooms	30 dBA	35 dBA

1 - National Planning Policy Framework, Department for Communities and Local Government, London, SW1E 5DU, March 2012.
2 - Planning Practice Guidance, Noise, Planning Guidance Portal, Department for Communities and Local Government, London, SW1E 5DU, March 2014.
3 - Noise Policy Statement for England, Department for Environment, Food and Rural affairs, London, SW1P 3JR, March 2010.

5. Discussion & Conclusions

5.1 I would normally include an extensive discussion on the relevance of the results at this point but I am afraid time will not allow. I believe the simplest way to consider the data from the sites is in the context of the old PPG 24 (see 4.19 - 4.24 above) as this offers a tried and tested formula by which to assess the potential impact of traffic noise.

5.2 It may be possible to interrelate the guidance in the new PPG with that from PPG 24 but that would be a somewhat intellectual exercise which I am not sure has been done by anyone yet. Before I embarked on that I would need to undertake quite a bit more research.

5.3 I will consider the five sites briefly as follows:

GT04 HARBURY LANE

5.4 This is currently a busy site. The car park is in constant daily use by National Grid who use it as a 'Park & Ride' for their staff at the technology park. By siting the monitoring equipment in the southern corner I minimised the impact of the car park but brought into play other sounds as the area was used by workmen for a period.

5.5 The graph indicates a spread of data which would be expected of a relatively busy roadside location. The only slight anomaly was the higher than normal L_{Aeq} level at 2.00 am. This would not affect the overall night time reading.

5.6 Needless to say noise levels would have been lower at the other side of the buildings (on the pitch) or further to the back of the site.

Day time	-	58 (Category B)
Night time	-	51 (Category B)
NI Regs	-	62

5.7 This was the noisiest site but may have been slightly quieter if unoccupied, however, it would have still been a Category B site suggesting noise should be taken into consideration.

GT15 EUROPA WAY

5.8 You will have noticed that the first day's readings were curtailed at midnight, this was due to a battery failure. The data available does indicate that noise levels were largely the same both days.

Day time	-	52 (Category A)
Night time	-	44 (Category A)
NI Regs	-	53

5.9 This was the quietest site at the main monitoring position falling within Category A suggesting noise need not be a determining factor.

5.10 It would be reasonable to add 9 dBA to this data should all the readings have been taken at the secondary monitoring position. This would result in that part of the site falling within Category B.

GT19 OAKLANDS FARM

5.11 Like GT04 this is a busy occupied site. The owner had twelve dogs boarding at the time and there were Caravan Club members using the part of the site where the monitoring was being undertaken. Having said that I am confident that the noise levels are representative of the full length of the site when unoccupied.

5.12 The graph shows one anomaly at 4.00 am which was a short period of noise (under 6 minutes) which would correspond to another caravan arriving on the site. When I called in the morning to collect the equipment a new motorhome was parked in the area.

Day time	-	56 (Category B)
Night time	-	51 (Category B)
NI Regs	-	58

5.13 This was similar to GT04 and noise should again be taken into consideration.

STRATFORD ROAD SITES

AREA 1

5.14 This site was also a busy occupied site but noise tom the contractors' vehicles did not make an appreciable difference to the data as noise levels were entirely dominated by traffic noise, mainly from the motorway. This site is heavily screened by bunding to the west and south so is well sheltered from local sources.

AREA 2

5.15 This is a large area and and locations close to the motorway are obviously going to be dominated by relatively high levels of traffic noise, constantly.

5.16 PPG 24 DATA was as follows:

AREA 1

1a	Day	-	52	Category A
	Night	-	50	Category B

AREA 2

1b	Day	-	63	Category B
	Night	-	59	Category C
2	Day	-	56	Category B
	Night	-	52	Category B
3	Day	-	56	Category B
	Night	-	52	Category B
4	Day	-	56	Category A
	Night	-	52	Category B
5	Day	-	63	Category B*
	Night	-	59	Category C

5.17 *If a full 16 hour reading were done in this position the daytime reading may just edge into C. Bear in mind, however, the microphone was positioned approximately 100m from the carriageway to compare with 1b, not at the front of the house. At the front of the house add a further 3 dBA, putting both day and night well into C.

5.18 Measuring noise in these circumstances is a particularly exact science in that highly sophisticated precision monitoring equipment is used, but it is very inexact from an environmental point of view. By that I mean that noise levels vary greatly as a result of atmospheric and weather conditions, and circumstances.

5.19 In this case the weather was almost ideal to obtain a worst case as there was a gentle breeze from the motorway towards the monitoring equipment. If it was in the opposite direction it would have been much lower. It should be noted, however, that tyre noise is greater in wet weather conditions.

5.20 An atmospheric inversion can result in noise travelling greater distances and being louder further away from the source. This effect quickly disappears, however, as soon as the inversion lifts.

SPECIAL CONSIDERATION

5.21 The advice in PPG 24 relates to housing developments and permanent structures have considerably better sound insulation characteristics that caravans. That being the case, it will be necessary at some point to consider the relationship between the advice in PPG24 and the new planning guidance.

OTHER SOURCES OF NOISE

5.22 There are no significant other sources of noise affecting any of the five sites. Having said that the continued use of parts of the Stratford Road sites needs to be taken into consideration if these are to be considered.

MIXED USE (LIVE WORK SITES)

5.23 The initial request asked me to consider the potential implications of allowing some minor business use on the sites such as storage or light industrial. This infers B1 use therefore such use should not be a problem by definition.

5.24 Being slightly more pessimistic, both GT4 and GT15 are located away from residential accommodation and should not impact on the amenity of the neighbourhood with light industrial use. It has to be born in mind that there is quite a heavy industrial use close to GT04 in the form of a large scrap yard. Noise from processes such as cutting scrap, working on vehicles etc would therefore be unlikely to be considered unusual in the area.

5.25 GT19, however, is quite different and may be more suitable for a transit site. There is currently living accommodation very close by and it is overlooked by the heavily used footpath by the canal. I am not privy to the Council's plans for this area, but would be willing to discuss this further as appropriate.

5.26 The Stratford Road sites cover a large area and there is the potential for development within yards of domestic housing, and so far away they could not be heard or seen.

5.27 I would make a particular point about AREA 1, however, which is very well screened with existing bunding and located so as to ensure the impact of a busy live work site would be most unlikely to affect any existing or future domestic accommodation in Warwick.

5.28 To summarise, I would advise limiting on site activity to GT04 and GT15 to B1 type use if at all possible, and consider either no such industrial use on GT19 or permit only a transit site.

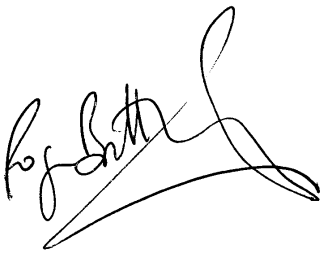
5.29 There does seem to be excellent potential for development of the Stratford Road sites (depending on location) as they would meet many of the siting criteria but have minimal impact on the amenity of the local neighbourhood.

5.30 I would also draw your attention to the Council's other powers to deal with nuisance mentioned in 4.12 - 4.13 above.

5.31 None of the sites exceed Category B (except those very close to the motorway which I am presuming will be discounted) and none are close to the 68 dBA specified under the Noise Insulation Regulations. It is my view that it could reasonably be argued that Category B sites would not fall within the definition of SOAEL and would not therefore give rise to a significant adverse impact to health and quality of life.

5.32 As, however, caravans generally have poor sound insulation, a discussion may be necessary on siting within the sites.

5.33 If the matter of noise on these sites is to be considered by an Inspector I would strongly recommend that more work is undertaken to try to effectively relate existing guidance and research with current planning guidance.



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August 2014

Appendix 1

Plans and Google Images

Appendix 2

Photographs

Appendix 3

Weather Data

WEATHER DATA FOR THE REGION
July / Aug 2014

The nearest weather station
to Warwick is Coleshill

Normally I would provide hourly weather data from the nearest Met Office weather monitoring station, here. Unfortunately, due to software issues this isn't available to me at the moment so it cannot be produced.

I can report, however, that the weather was warm and fine throughout with only light winds. During the period of monitoring at Stratford Road the breeze was from the south or south west ensuring a worst case.

Appendix 4

Instruments & Calibration

INSTRUMENTS AND CALIBRATION

1. All (environmental) noise monitoring was carried out using a CEL 593 precision integrating impulse sound level meter (serial number 094294). The microphone system comprised a CEL type 527 pre amplifier (serial number 3/0801728) with GRAS 40AE condenser microphone (23490). This conforms to the requirements of a Type 1 measurement system in accordance with IEC 804, IEC 651, and BS 5969. (IEC 61672-1:2002 - in UK BS EN 61672-1:2003)

2. The microphone for the environmental noise monitoring was enclosed in a CEL C6610 extension and all weather enclosure.

3. Short duration level readings were taken with a CEL 493 precision integrating impulse sound level meter (serial number 314089). The microphone system comprised a CEL type 225 pre amplifier (serial number 627079) with 192/2F condenser microphone (15800) with foam windshield.

4. The equipment has been calibrated by Acoustic Calibration Services Ltd traceable to UK Accreditation Service standards.

5. The meters were checked manually on all operational parameters before use.

6. The instruments were also calibrated manually on site immediately prior to and after the monitoring periods with a CEL-284/2 precision acoustical calibrator to 114 dB (serial number 12310957) See data recorded on site.

7. The Battery level on the meters should not fall below:

   3.2 volts for the 493
   7.5 volts for the 593

   for reliable operation. This was checked at the beginning and end of each monitoring period. See data recorded on site.

8. For environmental monitoring the instrument was programmed to provide simultaneous logging of L_{Aeq}, L_{A10} L_{A50} L_{A90} and L_{Amax} . The data was extracted from the equipment manually.

9. Meter response times:

Slow	-	1 second
Fast	-	125 ms
Impulse	-	35 ms
Peak	-	100 μs

Acoustic Calibration Services Limited,
Unit 6F, Diamond Industrial Centre,
Works Road, Letchworth Garden City,
Hertfordshire SG6 1LW

Tel: 01462-610085/87 Fax: 01462-610087
e-mail: cal@acousticcalibration.co.uk
web: www.acousticcalibration.co.uk

ACSL
Acoustic Calibration Services Limited

CERTIFICATE OF CALIBRATION

Model: CEL-593.C1 **Serial No:** 094294

Organisation: ZERO environment Ltd, PO Box 1659, Warwick CV35 8ZD

Job Number: 2203 **Customer Order Reference:** o3566

The Sound Level Meter was assessed for conformance with International Standards *IEC 60651* and *IEC 60804* using test procedures described in *BS 7580* Part 1. The meter claims Type 1 accuracy conformance and it was against these requirements that all the results were evaluated.

The sound level meter was fitted with a GRAS 40AE measurement microphone Serial No. 23490 and a CEL-527 preamplifier Serial No. 3/0801728 The microphone has a nominal capacitance of 20 pF and the device used to apply electrical signals to the preamplifier was of the same nominal capacitance.

A CEL-284/2 Acoustic Calibrator Serial No: 12310957 was supplied with the meter and was utilised in establishing the initial acoustic calibration setting.

The sound level meter passed all applied tests with no deviations from Type 1 specification, in accordance with *IEC 60651* and *IEC 60804*. Accordingly, the meter meets the requirements of *BS 7580* Part 1.

The sound level meter should be set to read 114.0dB when used with the associated acoustic calibrator, microphone and preamplifier as detailed above at reference atmospheric pressure.

All ACSL's calibration instrumentation is fully traceable to National Standards. The acoustic references are calibrated by laboratories which are UKAS accredited for the purpose.

Certificate No: **14312**
Date of Issue: **11th July 2013**

Signature:
Print Name: Trevor Lewis

Acoustic Calibration Services Limited,
Unit 6F, Diamond Industrial Centre,
Works Road, Letchworth Garden City,
Hertfordshire SG6 1LW

Tel: 01462-610085/87 Fax: 01462-610087
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web: www.acousticcalibration.co.uk

ACSL
Acoustic Calibration Services Limited

CERTIFICATE OF CALIBRATION

Model: CEL-284/2 **Serial Number:** 12310957

Organisation: ZERO environment Ltd, PO Box 1659, Warwick CV35 8ZD

Job Number: 2203 **Customer Order Reference:** o3566

The acoustic calibrator was run for a period of time until a stable level was measured. The output level was compared to the certified level of the laboratory measurement references. The measurements were repeated 5 times and the average value calculated.

The ambient temperature during calibration was **24.0** ± 1°C
The barometric pressure was **101.5** to **101.6** kPa.
The relative humidity was **65** to **75%**

The output of the acoustic calibrator when applied to the GRAS 40AE is 114.0 dB when corrected to the standard atmospheric pressure of 101.3kPa.

The signal output frequency of the acoustic calibrator is 1000Hz

All ACSL's calibration instrumentation is fully traceable to National Standards. The acoustic references are calibrated by laboratories which are UKAS accredited for the purpose.

Certificate No: **14311**
Date of Issue: **11th July 2013**

Signature:
Print Name: Trevor Lewis

Registered Office: HW Associates, Portmill Lane, Hitchin, Hertfordshire SG5 1DJ Registered No: 4143457 VAT No: GB 770505441
Directors: Trevor J Lewis, Owen R Clingan MIOA

Acoustic Calibration Services Limited,
Unit 6F, Diamond Industrial Centre,
Works Road, Letchworth Garden City,
Hertfordshire SG6 1LW

Tel: 01462-610085/87 Fax: 01462-610087
e-mail: cal@acousticcalibration.co.uk
web: www.acousticcalibration.co.uk

ACSL
Acoustic Calibration Services Limited

CERTIFICATE OF CALIBRATION

Model: CEL 493 **Serial No:** 314089

Organisation: Zero environment Limited, PO Box 1659, Warwick CV35 8ZD

Job Number: 2100 **Customer Order Reference:** rdbst3844

The Sound Level Meter was assessed for conformance with International Standards *IEC 60651* and *IEC 60804* using test procedures described in *BS 7580* Part 1. The meter claims Type 1 accuracy conformance and it was against these requirements that all the results were evaluated.

The sound level meter was fitted with a CEL 192/2F measurement microphone Serial No. 15800 and a CEL-225 preamplifier Serial No. 627079. The microphone has a nominal capacitance of 18 pF and the device used to apply electrical signals to the preamplifier was of the same nominal capacitance.

CEL-284/2 Acoustic Calibrator Serial No: 09412154 was utilised in establishing the initial acoustic calibration setting.

The sound level meter passed all applied tests with no deviations from Type 1 specification, in accordance with *IEC 60651* and *IEC 60804*. Accordingly, the meter meets the requirements of *BS 7580* Part 1.

The sound level meter should be set to read 114.0dB when used with the associated acoustic calibrator, microphone and preamplifier as detailed above at reference atmospheric pressure.

All ACSL's calibration instrumentation is fully traceable to National Standards. The acoustic references are calibrated by laboratories which are UKAS accredited for the purpose.

Certificate No: **14053**
Date of Issue: **30th July 2012**

Signature:
Print Name: Trevor Lewis

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web: www.acousticcalibration.co.uk

ACSL
Acoustic Calibration Services Limited

CERTIFICATE OF CALIBRATION

Model: CEL-284/2 **Serial Number:** 09412154

Organisation: Zero environment Limited, PO Box 1659, Warwick CV35 8ZD

Job Number: 2100 **Customer Order Reference:** rdbst3844

The acoustic calibrator was run for a period of time until a stable level was measured. The output level was compared to the certified level of the laboratory measurement references. The measurements were repeated 5 times and the average value calculated.

The ambient temperature during calibration was 25.0 ± 1°C.
The barometric pressure was 100.8 to 100.9 kPa.

The output of the acoustic calibrator when applied to the GRAS 40AE is 114.0 dB when corrected to the standard atmospheric pressure of 101.3kPa.

The signal output frequency of the acoustic calibrator is 1000Hz

All ACSL's calibration instrumentation is fully traceable to National Standards. The acoustic references are calibrated by laboratories which are UKAS accredited for the purpose.

Certificate No: **14052**
Date of Issue: **30th July 2012**

Signature:
Print Name: Trevor Lewis

Registered Office: HW Associates, Portmill Lane, Hitchin, Hertfordshire SG5 1DJ Registered No: 4143457 VAT No: GB 770505441
Directors: Trevor J Lewis, Owen R Clingan MIOA

Appendix 5

Noise Exposure Categories

NOISE EXPOSURE CATEGORIES (NECs) FROM THE OLD PPG 24 GUIDANCE

Category A - <55 dBA day time
- <45 dBA night time

Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.

Category B - 55 - 63 dBA day time
- 45 - 57 dBA night time

Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise.

Category C - 63 - 72 dBA day time
- 57 - 66 dBA night time

Planning permission should not normally be granted. Where it is considered that permission should be given, for example because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.

Category D - > 72 dBA day time
- > 66 dBA night time

Planning permission should normally be refused.

Appendix 6

Explanation of Terms

Explanation of terms

The terminology used in acoustics and noise is, unfortunately, necessarily complex. This is generally because it is a physical phenomenon which is difficult to quantify. The 'amount' of noise energy does not directly relate to what we perceive.

If for example a loudspeaker is placed in front of a person and they can hear it at 50 dB, add a second speaker playing the same sound and the noise is physically doubled, but that doubling is barely perceptible. The noise level increases by only 3 dB.

Add to this the fact that the human ear does not actually hear what it physically receives as it is more sensitive at certain frequencies than others, and the matter of perception is confused further. When it comes to hearing damage, however, it is the amount of energy that is received that is the key factor, therefore for every 3 dB increase the risks are doubled and we can only be exposed for ½ the time.

Below is quite a comprehensive list of noise terms, some of which are used here, but not all. Needless to say the readers of this report will be interested in these to a varying degree depending on their position. They are reproduced, however, for completeness and to aid interpretation for those who find it either useful or necessary.

Should more detailed explanations be required at, for example, a public inquiry or a court hearing, these can be provided upon request.

GENERAL NOISE TERMS

dB The measure of sound pressure in decibels
(ten times the log to the base ten of the ratio between a measured quantity and a reference value [20 μPa]).

dBA The measure of sound pressure with a weighting (adjustment) intended to compensate for the frequency non linearity of human hearing. Its effect is to reduce the sensitivity of the measuring instrument at low frequencies.

The 'A' in 'A' weighting can be denoted in two ways, eg

The L_{eq} was - 50 dBA or
The L_{Aeq} was - 50 dB
Both these methods have the same meaning.

Hz The unit of frequency, 1 Hertz (Hz) is equal to one oscillation per second. Frequency is related to the pitch of a sound.

Octave band - band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.

Third octave band - band of frequencies in which the upper limit of the band is $2^{1/3}$ times the frequency of the lower limit (octave bands divided into 3).

PERCENTILE LEVELS

$L_{N,T}$ Sound pressure level (always obtained using time constant 'F' - fast) which is exceeded for N% of a specified time, for example:

$L_{90,1hr}$ Sound pressure level exceeded for 90% of the time (1 hr). This is the standard measurement for the background level (the 10th percentile).

L_{50} Sound pressure level exceeded for 50% of the time (the 50th percentile).

L_{10} Sound pressure level exceeded for 10% of the time (the 90th percentile). This gives an indication of the upper limit of a fluctuating noise. The $L_{A10,18h}$ is the arithmetic average of 18 hourly readings from 06.00 to 24.00 and is used as the preferred criterion for measuring road traffic noise in the Noise Insulation Regulations 1975.

L_{max} The maximum sound pressure level during the monitoring period.

$L_{eq,T}$ The equivalent continuous sound pressure level. This is the level of a notionally steady sound having the same energy as a fluctuating sound over a specified measuring period (T).

This method of measurement is used in the calculation of $L_{EP,d}$

The $L_{Aeq\ 16\ hr\ day}$ and $L_{Aeq\ 8hr\ night}$ are arithmetic averages of hourly readings which are used as preferred criteria for measuring transport noise levels in accordance with the old Planning Policy Guidance Note 24, *Planning and Noise*.

Meter response times:

Slow	-	1 second
Fast	-	125 ms
Impulse	-	35 ms
Peak	-	100 μs

The use of different meter response times invariably results in a wide variation of readings. It is always essential to be clear which response time is used in any particular reading.

Appendix 7

Qualifications & Experience

Qualifications & Experience

The quantification of sound energy and subsequent assessment of data is a surprisingly complex process and it is essential that the work is carried out by a well trained, independent and experienced professional. This is a requirement of Government Guidance and of local authorities who may wish to act or form policy on the outcome of assessments. It is also preferable that all work is carried out by a single individual to ensure continuity and provide contemporaneous evidence throughout the process if required in future public inquiries or litigation.

All the work for this assessment was carried out by
Roger Braithwaite MSc MIOA CFCIEH FRSPH*

Mr Braithwaite is a highly competent Chartered Environmental Health Consultant, Fellow of the Royal Society for Public Health and Fellow of the Chartered Institute of Environmental Health[1]. He has over 30 years of experience undertaking many hundreds of noise assessments in a wide variety of complex situations. He qualified as an Environmental Health Officer in 1974, obtained the Institute of Acoustics Diploma in 1991 and a Masters Degree in Environmental Pollution Control in 1995. He has been a full and Corporate Member of the Institute of Acoustics[2] since 1996 and a 'Checked' Expert Witness[3] since 1999.

He is regarded as a leading expert in noise and nuisance in the UK and has represented many companies and organisations in Court and Public Inquiries over his career.

In 2010 he was chosen from over 11,000 professionals by Dr Stephen Battersby, President of the Chartered Institute of Environmental Health, to receive the highly prestigious CIEH *Presidential Award*. The award recognises his contribution to the advancement of Environmental Health.

INDEPENDENCE – It is essential that anyone undertaking this type of work has no association with any company or individual who supplies materials or equipment that could benefit from the outcome of the assessment.

Roger Braithwaite's evidence conforms strictly to Part 35 of the Civil Procedure Rules at all times in relation to procedure, content and incentives.

* Current Certificates can be provided upon request if required.

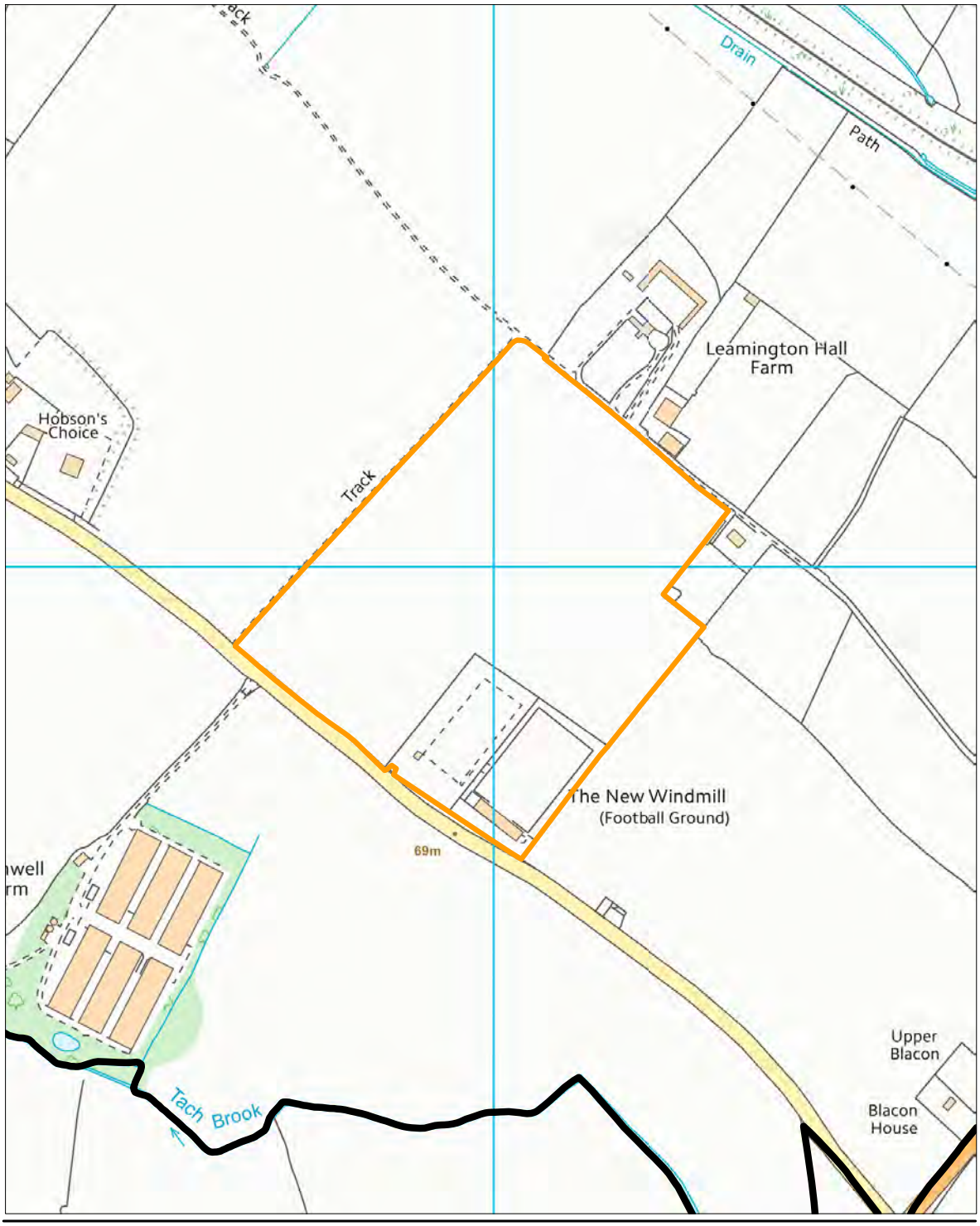
1 - To become a Fellow of the Chartered Institute of Environmental Health an individual must have been a member for at least 10 years, provided "distinctive service" to the Chartered Institute and demonstrated "special knowledge" and "special ability" in the fields of Environmental Health. He must then be nominated by two voting members and the application submitted to the Chief Executive. The nomination is then considered by a scrutiny panel and referred to Council. In 2010 Roger Braithwaite was nominated for Fellowship by the Graham Jukes, the Chief Executive, and Alan Higgins, the Chairman of the CIEH. The nomination was approved unanimously by the scrutiny panel and full Council.

2 – To become a full & Corporate Member of the Institute of Acoustics it is necessary to obtain the Postgraduate Diploma in Acoustics and Noise Control, be at least 25 years old, have a minimum of 3 years experience working in the discipline, and be sponsored by a minimum of 3 Corporate Members who can verify the applicant's knowledge and experience.

3 - The 'Checked' Expert Witness scheme used to be the Law Society 'Checked' scheme. Sweet & Maxwell took over the administration of the process whereby Expert Witnesses are checked for their competence in both the production of written evidence, and delivery under cross examination in court. A minimum of two competent legal references are required from Barristers and / or Solicitors.

Appendix 1

Plans and Google Images



WARWICK DISTRICT COUNCIL

GT04 - Land at Harbury Lane, Fosse Way

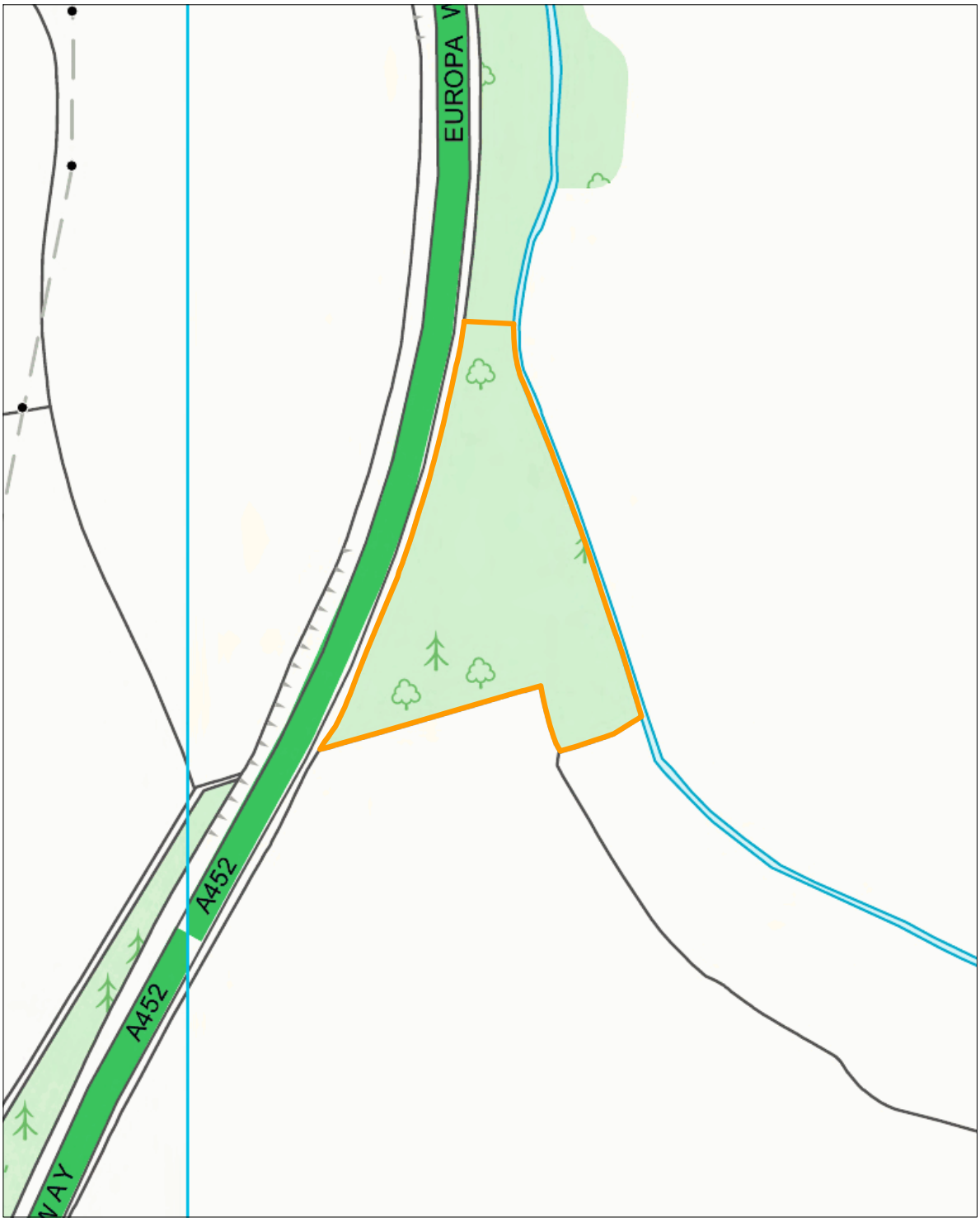
Scale
0 25 50 75 100 125 m

SP3360 | 1:5000 @ A4 | 20/01/2014 | DSR | Grid Reference: 433998E, 260956N

Policy, Projects and Conservation, Development Services. ldf@warwickdc.gov.uk (01926) 456504

GT04 Harbury Lane

● Monitoring position



GT15 - Land east of Europa Way

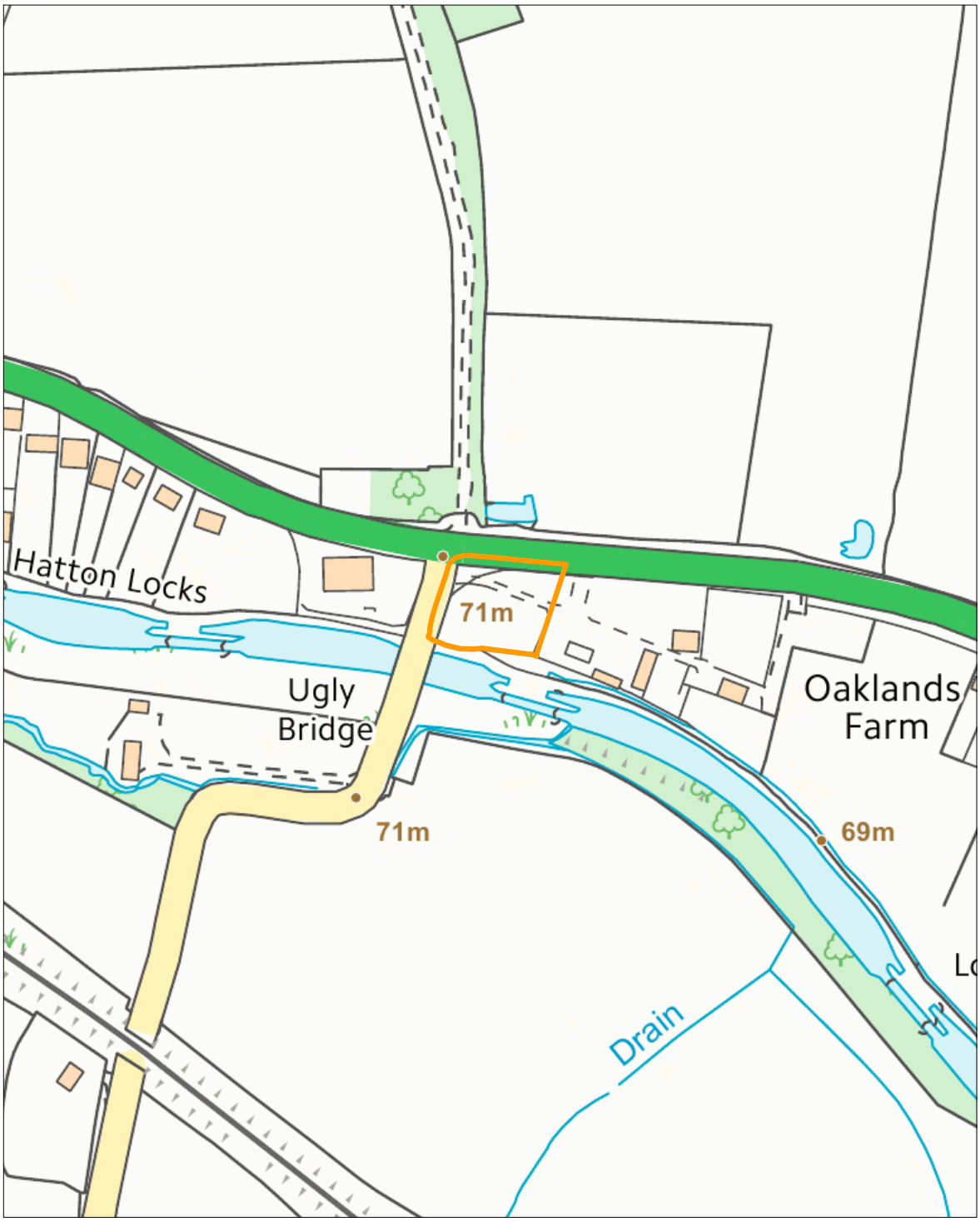
Scale
0 15 30 45 60 75 m

SP3062NW | 1:2500 @ A4 | 20/01/2014 | DSR | Grid Reference: 430152E, 262617N

Policy, Projects and Conservation, Development Services. ldf@warwickdc.gov.uk (01926) 456504

GT15 EUROPA WAY

Position 1 Position 2



GT19 - Land off Birmingham Road, Budbrooke, Oaklands Farm

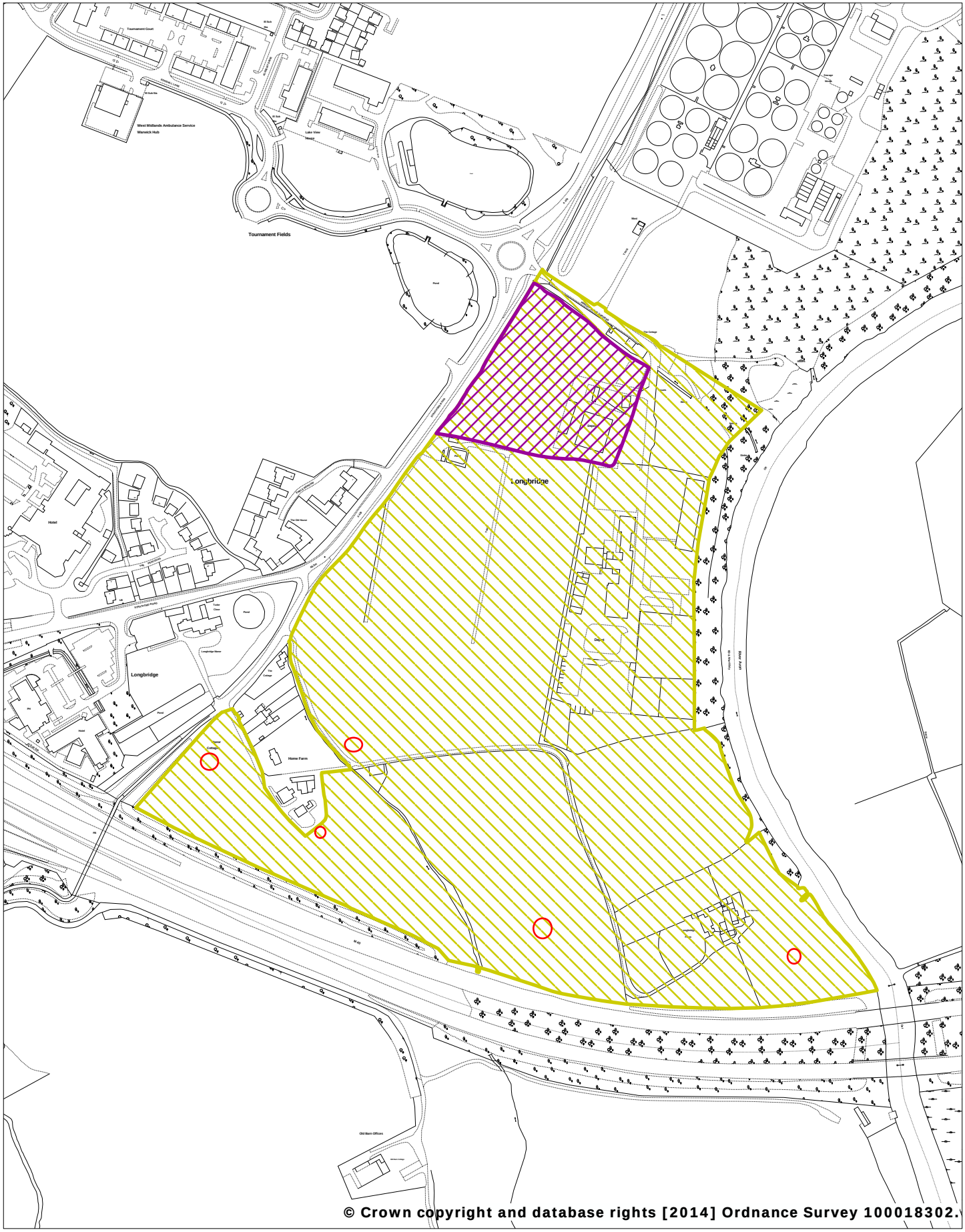
Scale
0 15 30 45 60 75 m

SP2566SE | 1:2500 @ A4 | 20/01/2014 | DSR | Grid Reference: 425598E, 266367N

Policy, Projects and Conservation, Development Services. ldf@warwickdc.gov.uk (01926) 456504

GT19 OAKLANDS FARM

Monitoring position



Key

- Stratford Road Masterplan
- WDC District Boundary

WDC Property and Land
- Land at Princes Close Gardens

Site B ,
Area for Land off Stratford Road Masterplan,
to include Gypsy & Traveller Site Allocation

Gypsy and Traveller Site Allocations DPD Policies Map

WARWICK DISTRICT COUNCIL

LONGBRIDGE SITES

I_____I Approx 100m

Appendix 2

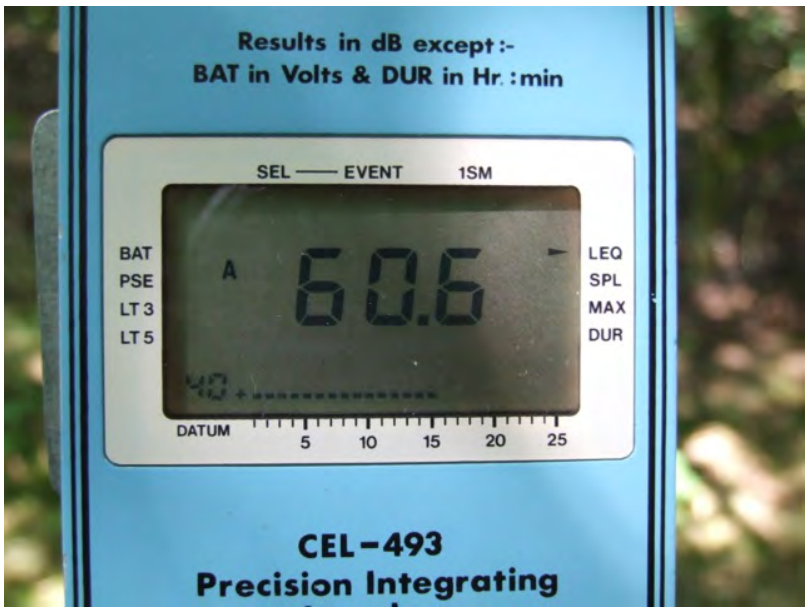
Photographs

GT04

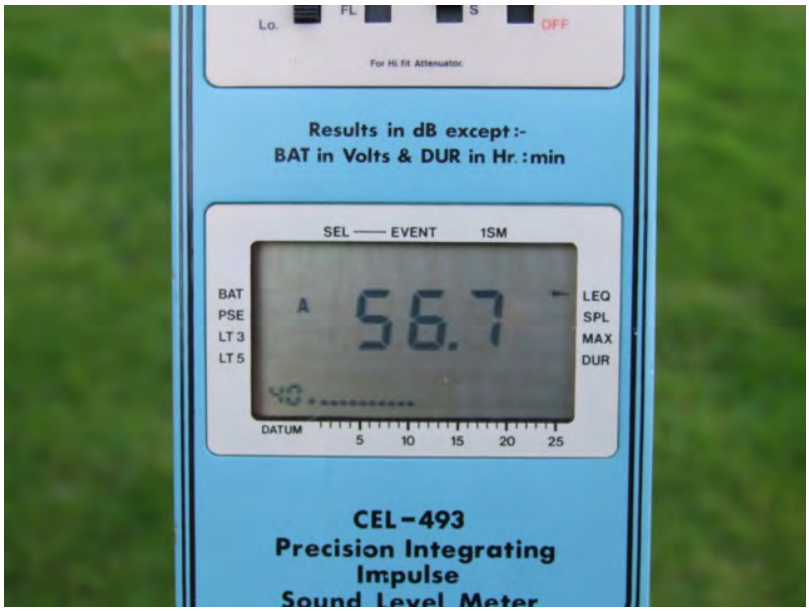
GT15

Position 1

Position 2


Results in dB except :-
BAT in Volts & DUR in Hr. : min
SEL —— EVENT
1SM
BAT
PSE
LT 3
LT 5
A
60.6
LEQ
SPL
MAX
DUR
DATUM
5
10
15
20
25
CEL-493
Precision Integrating

GT19



STRATFORD ROAD AREA 1

Position 1a

STRATFORD ROAD AREA 2

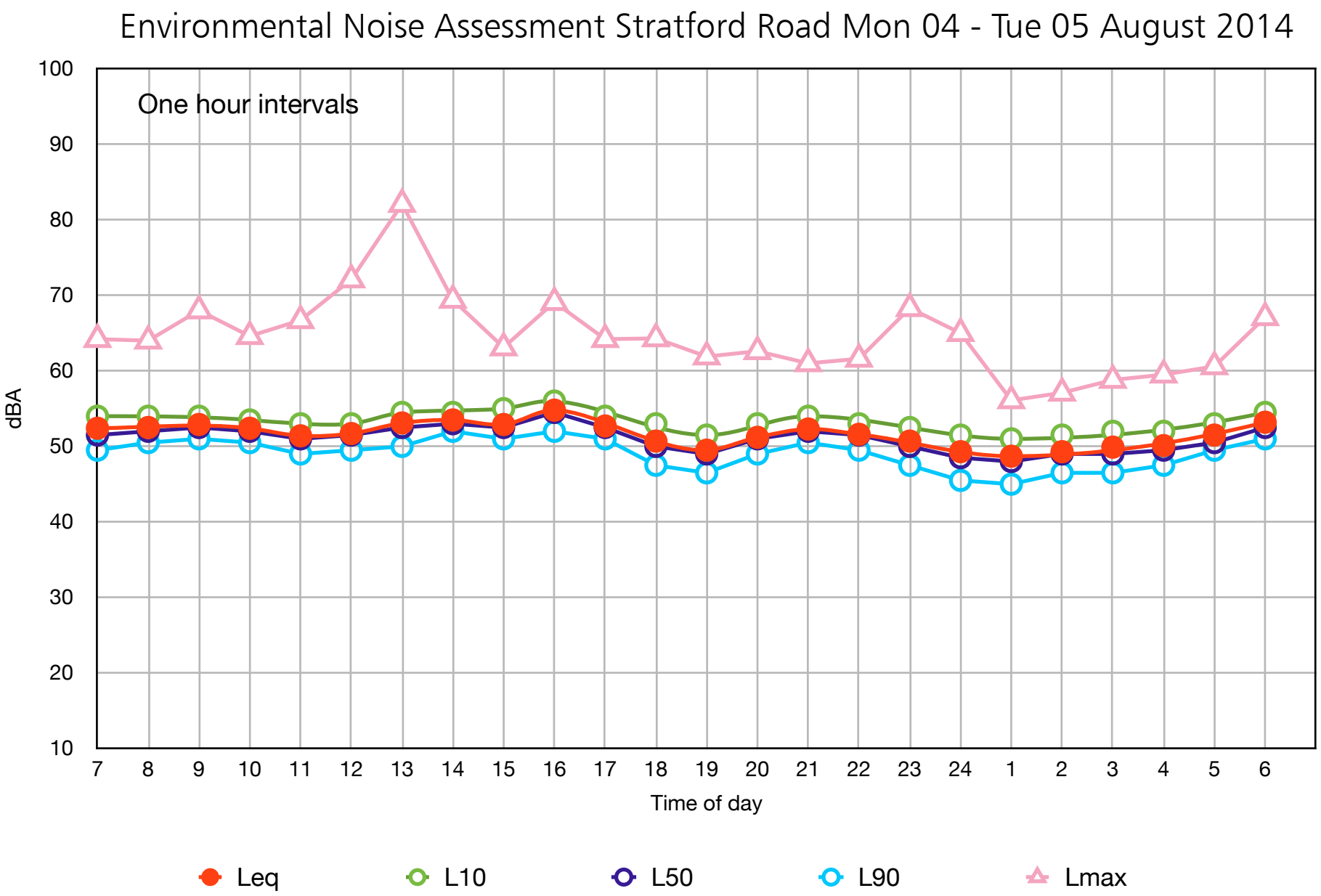
Position 1b

Position 2

Position 3

Position 4

Position 5


Environmental Noise Assessment Stratford Road Mon 04 - Tue 05 August 2014
One hour intervals
dBA
100
90
80
70
60
50
40
30
20
10
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
1
2
3
4
5
6
Time of day
Leq
L10
L50
L90
Lmax