



Mr. S. Allen,
Halfords Autocentres
Icknield Street Drive,
Washford West,
Redditch,
Worcestershire,
B98 0DE

16th May 2014

Reference: Autocentre, Havant

Project No: 1414485

Dear Simon,

Following is our acoustic report in respect to the discharge of Planning Condition 21 for the proposed Halford Autocentre at the end of Unit 3 within wider industrial development in Havant. The survey was extended to cover the whole site to benefit the tenants of the other units when occupied who will equally need to discharge this condition.

1.0 Background

- 1.1 Halfords Autocentre is proposed as part of Unit 3 (of Phase 2) of a wider development at 4-10 Solent Road for which planning consent has been given by Havant Borough Council (APP/12/00491). The application is a hybrid application for a full application for Phase 1 buildings (Units 1 & 2) and Outline application for Phase 2 buildings (Units 3 & 4).
- 1.2 The wider development, as taken from the planning application, is shown below as a mark-up of an aerial view (not to scale). This indicates the location of the proposed Halford Autocentre, the adjacent neighbours, and the other Units on the site in principle.
- 1.3 The typical operating hours of an Autocentre are Monday-Friday (08.30-17.30 hrs), Saturday (08.30-16.40 hrs) and closed on Sunday.



2.0 Noise Condition & Noise Statement

2.1 Planning Condition 21 states:

Any proposal relating to the installation and operation of potential noise creation equipment (manufacturing plant, refrigeration units, air conditions, extract ventilation equipment and so forth) shall be agreed and approved in writing by the Local Planning Authority prior to any such installation taking place.

N.B. Noise resulting from the use of any /all plant, machinery or equipment shall not exceed a level of 5dB(A) below the existing background noise level (or 10 dB(A) below if there is a particular tonal quality) when measured according to British Standard BS 4142-1997.

Reason: In the interests of protecting local residents from unreasonable noise levels which would be detrimental to the residential character of the area, and having due regard to Policy DM10 of the Havant Borough Core Strategy 2011 which forms part of the Local Development Framework.

2.2 Further, the application included a noise impact assessment (presumably from Havant environment health – unauthorised) which states the following:

The proposals the subject of this application relate to the redevelopment of a previously developed employment site, for employment purposes.

The principle of employment use at the application site is long established. In this respect, it should be acknowledged the proposed uses of the site are akin to the former employment uses, in addition to the extent of buildings and hard surfacing.

In these terms, noise issues should not be a matter for concern in the determination of the application.

2.3 Irrespective of this statement Noise Condition 21 remained as part of the planning consent.

3.0 Noise Sources related to the Autocentre

3.1 This Autocentre forms part of a roll out of Autocentres by Halfords for which Sharps Redmore has assessed at a number of locations around the country. Primarily the centres are the same and the noise sources within the centres have been identified. These are listed below with their respective noise levels.

3.2 The space in the workshop will normally include:

- A recirculation fan at high level, with associated heater. The fan does not include a specific extract or intake to outside. The heater has a derived noise level of 76 dB L_{Aeq} at 1 metre and the fan is 67 dB L_{Aeq} at 1 metre. Their respective in-room noise levels when away from the units are 68 dB L_{Aeq} and 60 dB L_{Aeq} within the Autocentre.
- A single compressor pump and in this case this is introduced at the back wall of the workshop with a measured noise level of 76 dB L_{Aeq} at 1 metre, and a general in-room noise level of 68 dB L_{Aeq} .
- Activity noise has been measured as typically 70-72 dB $L_{Aeq, 1 \text{ hour}}$.

4.0 Noise Survey

- 4.1 A noise survey was undertaken during the day, night-time and early morning of the 12th and 13th May 2014. Measurements were taken with a Norsonic 118 sound level meter which was calibrated before and after measurements showing no drift, and with a full traceable calibration history.
- 4.2 Weather conditions were dry through the manned survey with wind speeds less than 5 m/s. Measurements were taken at 3 locations as shown on the aerial view plan, given below. The results are shown as dB's in the table below at each location and sample time.

Location 1: 5 metres back from Solent Road, near cottages of Brockhampton Road

Location 2: 10 metres back from Solent Road towards the Medical Centre

Location 3: 3 metres from No. 39 Brockhampton Lane
(one of the cottages closest to the Autocentre)

Loc 1					Loc 2					Loc 3				
Time	LAeq	LAmx	LAmin	LA90	Time	LAeq	LAmx	LAmin	LA90	Time	LAeq	LAmx	LAmin	LA90
13:30	67	84	58	60	13:55	69	92	59	61	14:20	63	74	58	61
13:40	67	79	57	60	14:05	71	85	58	64	14:30	63	81	58	61
14:50	69	80	60	63	15:20	68	81	60	62	15:45	61	75	55	58
15:00	70	83	60	64	15:30	67	77	57	60	15:55	63	83	57	59
16:10	69	80	59	62	16:35	68	81	56	60	17:00	64	75	57	62
16:20	69	80	58	62	16:45	69	87	48	61	17:10	66	77	52	62
17:25	68	88	59	61	17:50	69	79	57	61	18:15	64	79	55	60
17:35	68	78	58	62	18:10	67	79	56	60	18:25	64	80	56	59
21:50	57	77	45	48	22:15	57	74	40	45	22:40	52	66	40	44
22:00	57	74	45	48	22:25	53	69	39	44	22:50	51	65	38	43
02:05	50	68	39	41	01:45	51	68	37	39	01:25	48	59	37	40
02:10	50	69	39	41	01:50	50	64	36	39	01:30	49	61	39	40
02:15	48	62	39	41	01:55	48	60	38	42	01:35	50	65	39	39
08:55	68	80	52	56	08:30	65	78	51	56	08:05	58	73	50	53
09:05	68	79	53	56	08:40	65	78	54	58	08:15	58	77	50	53
09:20	69	82	53	57	09:45	63	75	56	59	10:10	63	72	58	60
09:30	68	84	51	59	09:55	64	86	54	59	10:20	63	74	57	60

Samples were taken in 10 minutes lengths during the day-time and 5 minutes lengths during the night-time. The definitions are provided in Appendix A.

- 4.3 The survey results indicate typical background noise levels, L_{A90} , during the day-time varying between 56-64 dB on Solent Road, reducing marginally along Brockhampton Lane to 53 dB although remaining for most of the working day between 59-62 dB. The ambient noise levels, L_{Aeq} remain predominantly in the mid-high 60 dB's during the day with a minimum measured in the evening as 58 dB along Brockhampton Lane.
- 4.4 During the night-time background noise levels, L_{A90} , are between 39-41 dB with ambient levels, L_{Aeq} , between 48-51 dB.
- 4.5 The noise environment is dominated by local road traffic noise during the day, and the M27 at night, particularly along Brockhampton Lane.

5.0 Assessment

- 5.1 The assessment required for Planning Condition 21 is in accordance with BS 4142. The standard approach for the assessment of new mechanical plant in residential areas is BS 4142: 1997, "Rating industrial noise affecting mixed residential and industrial areas." This standard assesses the likelihood of complaint by comparison of the existing background noise level, L_{A90} , with the specific 'rated' noise level of the new mechanical noise L_{Ar} , defined by the L_{Aeq} parameter. The 'rated' level, L_{Ar} , is the L_{Aeq} noise level plus a 5 dB penalty if the noise source is judged to have any characteristics which draws attention to itself. The method of assessment states that if the difference between the 'rated' noise level of the plant is 5 dB greater than the background level, then the likelihood of complaint is of marginal significance. If the rated level is 10 dB above the background level, then complaints are likely. If the rated level is 10 dB below the background level, then complaints are unlikely.
- 5.2 The requirement within Condition 21 is 5 dB below the background noise level, (or 10 dB if the plant has tonality i.e. character).
- 5.3 From the survey results at Location 1 the day-time minimum background noise level is 53 dB L_{A90} in the morning when operations may begin, but quickly increases 59 dB.
- 5.4 The nearest residential premises to the Autocentre are the cottages across Brockhampton Lane approximately 23 metres away. The Autocentre should be assumed to have its main roller shutter doors open for much of the time whilst working on vehicles and moving them in and out of the workshop, therefore plant noise within the building will escape unattenuated via this route. The aperture of the access doors is estimated at 12 m².
- 5.5 To assess the noise breakout from the plant within the Autocentre via the open doors to the nearest residence, the following calculation is used

$$L_{pA \text{ (receiver)}} = L_{pA \text{ (rev)}} + 10 \log S - R - 20 \log(r) + 10 \log(Q) - 17$$

Where:

$L_{pA \text{ (receiver)}}$ = The noise level at the nearest noise sensitive receiver.

$L_{pA \text{ (rev)}}$ = The cumulative reverberant L_{Aeq} noise level within the workshop from the plant.

S = Area of radiating surface (m²). In this case taken as 12 m².

R = Sound reduction through the sample area. In this case zero.

r = Distance from front of the workshop to receiver (m) In this case taken as approximately 23 metres.

Q = Directivity factor greater than a sphere source (taken as 4)

-17 = Combined Constant from the full formula (combination of -6 dB and - 11 dB).

- 5.6 There is no external plant from the Autocentre (other than potentially a small toilet or office extract) as ventilation to the internal plant is via the open doors or recirculated within the workshop area. The three plant noise sources outlined in Section 3.2 (the recirculated fan, the heater and the pump) have a combined semi-reverberant workshop noise level of (68 dB + 60 dB + 68 dB respectively) of 71 dB L_{Aeq} .
- 5.7 Using the formula above the predicted free field noise level at the nearest residence is 44 dB L_{Aeq} .
- 5.8 The heater and recirculating fan are not likely to show any character, the pump will be intermittent and may include some tonality, and therefore to strictly meet the criteria the plant should be 10 dB below the background noise level.
- 5.9 Comparing the predicted noise level to the measured pre-existing day-time background noise level the plant noise is 15 dB below the typical background noise level. There is a period first thing in the morning when the Autocentre opens where it may be closer to 9 dB below the background noise level, but still generally meets the Planning Condition limit.

6.0 Conclusions

- 6.1 Sharps Redmore have undertaken a noise survey of the industrial development site, and specifically assessed the plant noise emissions from the proposed Autocentre.
- 6.2 The assessment indicates plant noise levels will generally and for most of the time substantively, meet the criterion within Planning Condition 21.
- 6.3 On this basis, and from experience of a number of Autocentre sites operating successfully in similar if not more noise sensitive locations, it is considered that this plant does not require any further noise control measures.

We trust this has interpreted your requirements correctly however please contact me if you wish to discuss any aspect further.

Yours sincerely,



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Appendix A: Common acoustic parameters for environmental surveys

These are the main noise indices in use in the UK:

- L_{A90} : The sound level (in dBA) exceeded for 90% of the time. This unit gives an indication of the sound level during the quieter periods of time in any given sample. It is used to describe the “background noise level” of an area.
- $L_{Aeq,T}$: The equivalent continuous sound level over a period of time, T. this unit may be described as “the notional steady noise level that would provide, over a period, the same energy as the varying noise in question”. In other words, the energy average level. This unit is now used to measure a wide variety of different types of noise of an industrial or commercial nature, as well as road traffic, aircraft and trains.
- L_{A10} : The sound level (in dBA) exceeded for 10% of the time. This level gives an indication of the sound level during the noisier periods of time in any given sample. It has been used over many years to measure and assess road traffic noise.
- L_{A1} : The sound level (in dBA) exceeded for 1% of the time. This unit can give an indication of a regular maximum noise level from such activities as dance music.
- L_{Ae} : The sound exposure level, (often denoted SEL) is the noise level of an event, such as a train or aircraft event, normally expressed in a 1 second time period.
- L_{Amax} : The maximum level of sound, i.e. the peak level of sound measured in any given period. This unit is used to measure and assess transient noises, i.e. gun shots, individual vehicles, etc.