

Acoustic South East



Desktop Noise Impact Assessment

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Project: J4242

Issue 1

Site: **Knowe Top**

Client: **Nyetimber Wines**

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1 Introduction and Executive Summary

Acoustic South East have been appointed to undertake an acoustic assessment to support a planning application for a new pressing building at Nyetimber Wines Estate. The stand-alone building will replace an off-site pressing centre at Tillington, Petworth.

This is a desk-based approach.

A new pressing centre is proposed on the Nyetimber Estate. This is located approximately 185m to the North East of the newly constructed Knowe Top bungalow.

The pressing centre would be used only for a short period of six weeks. This includes the preparation and readiness of the centre, a two-and-a-half-week period of pressing and then further cleaning of the site.

The closest residential building is Knowe Top bungalow which is owned by the Nyetimber estate and houses workers of the site. In reality, the workers living in the bungalow would be working in the pressing centre.

A computer noise model was constructed of the proposed new pressing centre as an area sound source with openings matching those of the elevations provided by the architect. The noise model predictions indicate an impact of 21dB (rounded) at the Knowe Top Bungalow. When compared with previous noise modelling predictions, this was 49dB. It is therefore demonstrated that the new pressing centre is not likely to have any impact on the site soundscape for the Knowe Top Bungalow.

On the basis of the information presented, planning consent should not be withheld on noise grounds.

2 Context, Noise Criteria & Noise Assessment Methodology

2.1 Context

Nyetimber Wines have an existing pressing centre at Knowe Top as seen in Figure 1 below. It is proposed to erect an additional building where the pressing of grapes may occur to the North East of the existing site.

The proposed new building is approximately 185m North East from Knowe Top Bungalow, without any obvious line of sight.

The site would not be in continual use, but for approximately 6 weeks in a year. The six weeks consists of two weeks of preparation, cleaning and readiness, with the pressing occurring for just over two weeks and then a repeat of the cleaning cycle.

The assessment therefore covers the impact of the new centre on the newly constructed residential bungalow building at Knowe Top, located to the South West of the existing pressing building.

2.2 Site Location

The application site is detailed in red in Figure 1. The proposed new building can be seen to the North East of the site.



Figure 1. Site Location

2.3 Nearest Residential Receptor(s)

The closest residential receptor is a staff work/live building located at Knowe Top. This is seen to the South West of the existing pressing centre. It is a part of the Nyetimber Estate and is owned by Nyetimber estate with workers residing in the dwelling.

Aside from the Knowe Top Building, residents exist to the West of the site, albeit at distance.

To place these properties in context, the Knowe Top building is approximately 185m from the new pressing centre without any obvious line of sight.

- High Barn is approximately 304m.
- High Barn Bungalow is approximately 430m.
- Huntleys is 508m

2.4 Previous Work by Acoustic South East

An assessment of the existing pressing centre on the proposed new Knowe Top Bungalow was made in July 2019 under J2721 and should be apparent on the Horsham planning website. The work involved modelling the impact of plant located externally on the current pressing centre and how this might impact the new build dwelling.

It was and remains relevant that the occupants of the Knowe Top Bungalow are all workers on the estate and likely to be involved in the harvest of grapes in the short 6-week window when these are processed.

2.5 Methodology

A desk-based approach is proposed on the following basis;

- The internal soundscape at pressing centres has been measured historically by Acoustic South East.
- A desktop approach was previously agreed with Horsham District Council and the situation has not changed significantly.
- Computer noise models already exist of the current pressing centre.
- The use of the pressing centre is not continual, but a maximum of 6 weeks at a time.
- The residents likely to be impacted, are in fact workers, engaged inside the buildings.

A new noise model was therefore generated of the new pressing centre in IMMI. The model compared the impact of the new centre and the existing centre in order to present what, if any, impact is likely to occur.

On the basis of the noise impact being assessed at the nearest residential dwelling, albeit a live/work scenario, it follows logically, that properties located further away and at significant distance will have a further reduced impact.

3 Computer Noise Modelling

In order to see how noise varies at different positions around the proposed development it is possible to produce a noise contour map. A computer noise model has been completed using the computer package IMMI. Drawings of the area have been used to complete the noise models and the topography of the location recreated. IMMI faithfully implements the propagation method of ISO-9613:1996; Acoustics – Attenuation of sound during propagation outdoors.

The noise modelling software predicts free-field and A weighted dB values.

3.1 Noise Model Inputs

The new pressing centre was modelled as an area sound source in IMMI. This allows the internal sound pressure level to be set at 85dB $L_{Aeq,T}$ which is consistent from our visits to pressing centres and the Nyetimber estate. The 85dB would fill the entire building within the noise model, albeit in reality, the noisy working areas are often compartmentalised. The model therefore reflects a worst case.

The building was erected in the model to the specifications provided by the architects. Where there are steel roller shutters, these were modelled at 22dB Dw, the insulated metal cladding for the walls and roof were modelled as 25dB Dw (Kingspan Rw1000).

Receptor positions were added to the same positions as the model which was created in 2019. Therefore, with the known impact from the pressing centre already modelled, any new contribution from the proposed new pressing centre can easily be assessed.

3.2 Noise Model Outputs

The 2D noise contours generated by patron noise are shown below.

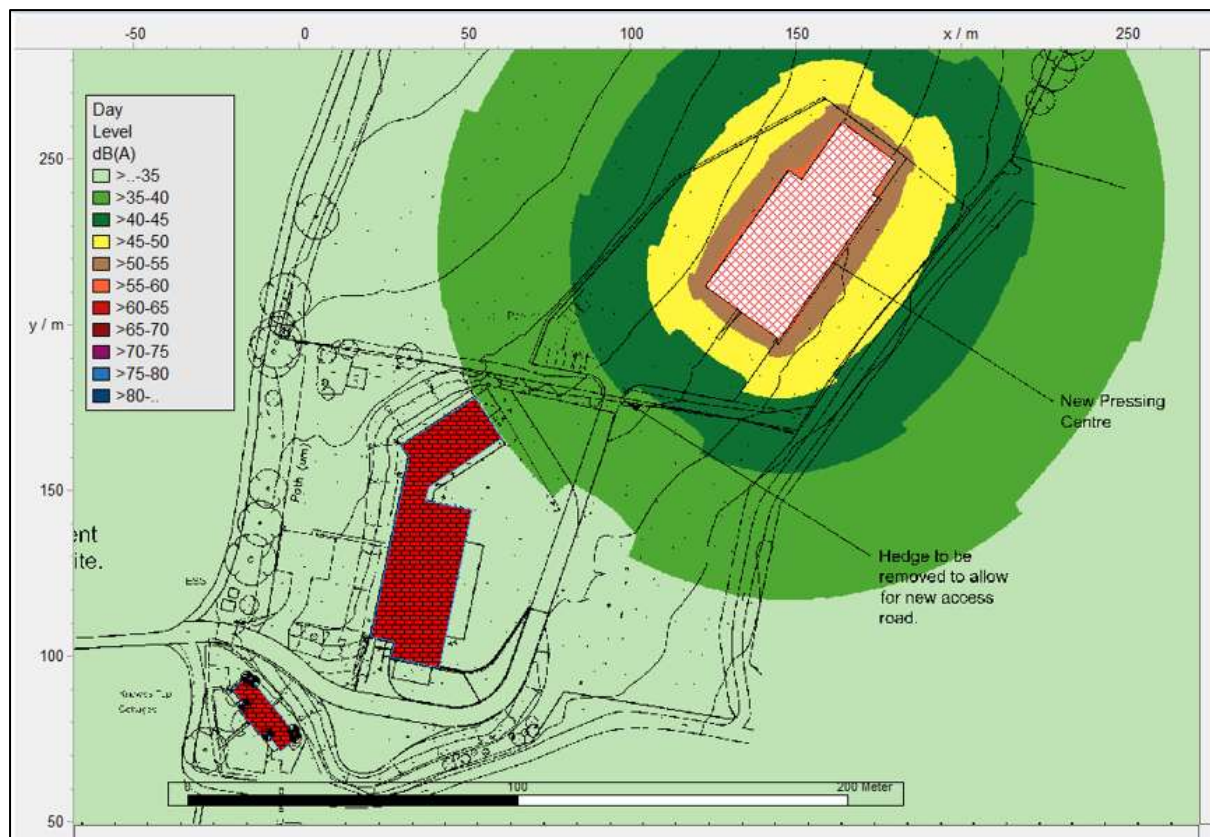


Figure 2. Noise Model Outputs

From the 2D image above, it is noted that the sound is not impacting the Knowe Top Bungalow located to the South West. This can also be demonstrated in terms of noise levels.

The worst-case bedroom 2 located at the first floor had a received sound pressure level of the existing pressing centre of 48.6dB, rounded to 49dB.

Placing a receptor at the same position and running only the proposed new pressing centre, the predicted external (freefield sound pressure level) is 20.9dB L_{Aeq} . This is considerably less than the existing pressing centre and would not contribute to the site soundscape.

This is demonstrated through logarithmic addition ($10\log 10^{2.09} + 10^{4.86}$)=48.6, no change due to the fact that the new pressing centre is more than 10dB below the original sound pressure level.

4 Measured Noise Levels (2014)

From the original reporting, it was stated that the daytime measured sound pressure level was 46B $L_{Aeq,16\text{ hour}}$ (rounded) and night time was 34dB $L_{Aeq,8\text{ hour}}$.

Comparing the prediction of 22dB from the new pressing centre, this is comfortably below the measured site soundscape.

5 Conclusion

A new pressing centre is proposed on the Nyetimber Estate. This is located approximately 185m to the North East of the newly constructed Knowe Top bungalow.

The pressing centre would be used only for a short period of six weeks. This includes the preparation and readiness of the centre, a two-and-a-half-week period of pressing and then further cleaning of the site.

The closest residential building is Knowe Top bungalow which is owned by the Nyetimber estate and houses workers of the site. In reality, the workers living in the bungalow would be working in the pressing centre.

A computer noise model was constructed of the proposed new pressing centre as an area sound source with openings matching those of the elevations provided by the architect. The noise model predictions indicate an impact of 22dB at the Knowe Top Bungalow. When compared with previous noise modelling predictions, this was 49dB. It is therefore demonstrated that the new pressing centre is not likely to have any impact on the site soundscape for the Knowe Top Bungalow.

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