

From:

To:

Cc:

Subject: Re: Application number 2018/70/94102/W Objections to proposed removal of planning conditions 3 and 9 attached to planning approval 2015/91993.

Date: 08 March 2019 17:22:13

Attachments:

This combined written objection is from both:

Kirklees Planning
PO Box B93
Civic Centre 3
Huddersfield
HD1 2JR
Email: dc.admin@kirklees.gov.uk
<mailto:Planning.Enforcement@kirklees.gov.uk>

Re: Application number 2018/70/94102/W

Applicant: Longwood Property Management (UK) Ltd

Location: Imperial Mills, Alexandra Road West, Paddock, Huddersfield, HD3 4EX

Golcar Ward

We wish to make you aware of a number of strong objections we have with regard to the proposed removal of planning conditions 3 and 9 attached to planning approval 2015/91993.

- The provision of social housing.
- Impact on residential amenity with respect to noise and visual appearance.
- Garden locations as currently laid out in the back-to-back houses subject to high levels of road traffic noise.
- fails to substantiate its claim

that the noise levels from the installed HVAC mechanical plant attached to the rear of Crown House are “minimal”. This claim is not supported by the HVAC manufacturers published test data.

- If gardens are moved to the rear of the six back-to-back houses they will then be subject to noise from the installed HVAC exterior units.
- There are no planning controls on the HVAC exterior units so in principle they can be run at any time of the day or night.

Given that this current application is for the removal of Conditions 3 & 9, it is clear that, although Condition 3 and 9 are *pre-commencement conditions*, they are in breach.

General observations:

1. The attached expert acoustical assessment report has identified that the 10-15°C low ambient temperature would have resulted in the HVAC plant operating at a low level. We suggest that only the single HVAC unit that serves the computer server room and runs 24hrs a day as required (Toshiba RAV-SM564ATP-E top unit) was in all likelihood actually in operation.
2. The standard double glazing units and vents installed in the six back-to-back houses as currently constructed *are not noise attenuating units as specifically recommended in the* and are of the same standard design and construction on the front and rear facades. The trickle vents and ventilation units on the front Longwood Road and rear Alexandra Road West *are not acoustic attenuation designs* such as those from listed in the

This will leave future occupants subject to high levels of Road Traffic Noise RTN in breach of the legislation regulating the SRI of the building fabric with respect to night time RTN levels and more broadly other Environmental Protection noise legislation.

3. We are alerting you to the urgent issue of inadequate SRI sealed glazing units and ventilation to ensure that the contracted private Building Control Inspectors do not negligently sign off the six back-to-back houses as currently constructed.
4. If the private Building Control Inspectors selected by passes these houses as currently constructed there will be a clear breach of duty on the part of Kirklees Council to ensure the integration of any necessary noise mitigation features within the new development, which are necessary to ensure prevent noise nuisance and ensure residential amenity to meet Policies D2 and EP4 of the Kirklees Unitary Development Plan, and Chapter 11 of the National Planning Policy Framework.
5. There will also be a clear breach of duty on the part of Kirklees Council to ensure compliance with environmental protection legislation relating to building fabric, sections of the Environmental Protection Act 1990 - (England and Wales) and

potentially the Noise Act 1996.

6. In light of the above if no action is taken we will be immediately be referring this whole sorry situation to the Secretary of State for Environment, Food and Rural Affairs and the Local Government and Social Care Ombudsman for review.
7. _____ was definitely not disclosed to the construction sub contractors contract manager working on behalf of _____ carrying out the construction of the six back-to-back houses. _____ personally discussed his concerns with _____ on Monday 4 March 2019 and left him a copy of the _____ report.
8. The _____ makes specific recommendations for the installation of noise attenuation double glazed windows to the front and rear of the six back to back houses to mitigate road traffic noise levels. 36.9 dB R_{Tra} and 31.9 dB R_{Tra} at the front house along Longwood Road and 25.1 dB R_{Tra} and 20.1 dB R_{Tra} for the rear facade glazing in Alexandra Road West.

9.

The standard double glazed widow units currently installed do not provide sufficient levels of noise attenuation. It is incumbent upon Planning and the delegated private Building Control Inspectors with respect to duty of care to protect local residents from noise nuisance. If he delegated private Building Control Inspectors negligently sign off the six back-to-back houses as currently constructed Kirklees Council will be liable in law.

10. _____ may underestimate the required window and ventilation sound reduction index SRI for the front three back-to-back houses with Longwood Road facades due to the measurement time frame used (11:47 – 15:30) extrapolated to a 16 hour average. This excluded rush hour periods (particularly afternoon / evening when children might be in front gardens) and sensitive periods 22:00 - 23:00 when residents typically would be attempting to get to sleep. The sensitive period 22:00 - 23:00 does have surprising levels of loud boy racer vehicles with loud exhausts, Subaru Impreza Turbo for example and others driving at high speed on both Longwood Road and the road to Milnsbridge. Additionally one or two notably very loud exhaust Nissan GTR's (200 mph + loud hyper car) and other vehicles at the sensitive period 22:00 - 23:00 and at 4:30 – 7:00am on a high speed morning daily commute.
11. The garden re-orientation recommended in the report to relocate the garden spaces BEHIND the rear 3 houses to ensure acoustic screening away from the excessive Longwood Road RTN has been wholly ignored. An ideal wooden screening fence between the front gardens and Longwood Road would only achieve 8-10 dB attenuation (according to published report PPR490 The Acoustic Durability of Timber Noise Barriers on England's Strategic Road Network, Transport Research Laboratory PA Morgan May 2010). Children returning from school might be expected to play in said front gardens after school at peak afternoon / evening rush hour traffic levels. If outdoor spaces are moved to the rear they then become

subject to noise from the installed HVAC.

12. Kirklees Council Planning and Environmental Health seem to be entirely ignore *guidance* contained within ProPG: Planning & Noise Professional Practice Guidance on Planning & Noise, New Residential Development March 2016 published in June 2017 and ProPG: Planning & Noise Professional Practice Guidance on Planning & Noise New Residential Development SD2-i SUPPLEMENTARY DOCUMENT 2 GOOD ACOUSTIC DESIGN ProPG Planning & Noise: New Residential Development May 2017.

“Good acoustic design is about more than the numbers. It is a holistic design process that creates places that are *both comfortable and attractive to live in*, where acoustics is considered integral to the living environment.”

1.8 It is also Government policy that LPAs should seek opportunities to protect, improve and enhance the environment, and this requires proper consideration of the acoustic environment around new residential developments

1.9 The NPPF states (para.17) that planning should always seek to secure high quality design *and a good standard of amenity* for all existing and future occupants of land and buildings. This is considered to include securing good acoustic design in and around new residential development.

13. We view the report as wholly flawed with respect to the HVAC assessment. The HVAC assessment / measurement position, distance and angle from units, number of units running, all units running continuously etc are not reported yet the report informally asserts the level is ‘minimal’. This is in addition to the low ambient temperature 10-15 °C causing the HVAC units to be operating at a low level, if at all.
14. The environmental noise report is supposed to be impartial and essentially objective. We will evidence why in our opinion this report is biased in that it minimises levels from the HVAC plant installation and potentially reduces apparent road traffic noise levels via a restricted measurement time frame extrapolated to a 16 hour average.
15. However, we view the SRI for glazing and ventilation report recommendations as the lowest legislation compliant specifications. The six back-to-back houses as presently constructed do not meet those legislation requirements.

Failings with the

In relation to the HVAC Mechanical plant:

1. demonstrates a significant failure with respect to the measurement / assessment of the HVAC mechanical plant.
2. The does not state whether *all* of the mechanical plant was actually fully operational i.e. were any or all HVAC units operating simultaneously when

carried out their informal assessment of the HVAC installation?

3. characterise the HVAC noise emission as “minimal” in both the on and off phases but provide absolutely no evidence to support this assertion. Manufacturers sound power Lw and sound pressure Lp data for the specific currently installed HVAC units and the calculated sound pressure levels at the nearest sensitive receptor (NSR) of the rear three properties of the six back-to-back houses derived from that manufacturers test data produced by our acoustic consultant *do not support this claim*.
4. consultant selected a single measurement location at the side of the front three back-to-back houses predominantly affected by road traffic noise. The single location of the measurements has from our perspective been chosen to mitigate measured actual and potential mechanical plant noise issues. This reduction of HVAC noise contribution occurs due to environmental conditions (low ambient temperature) distance attenuation and directivity at the selected measurement location compared to the nearest sensitive receptor (NSR) of the rear three properties of the six back-to-back houses. We believe there should have been two measurement locations because the nearest sensitive receptor (NSR) of the front three new build back-to-back houses is predominantly subject to road noise whereas the nearest sensitive receptor (NSR) of the rear three back-to-back houses, screened as they are from Longwood Road traffic, is subject to a mix of direct HVAC plant noise, calculated at a minimum 47 dBA at NSR from the sixteen metres distant [Note 1] HVAC plant and ambient road traffic noise.
claim:

“The monitoring position was chosen in order to collect representative sound levels of the area during the weekday time period, which is expected to be the time of highest potential impact. This position was also representative of the sound levels at the NSR. The measurement position can be found in appendix C”.

5. As Kirklees Council have never granted planning permission for the HVAC it has gained effective permission under the Town and Country Planning Act 1990 four year rule. However it is well established in law that planning permission is not a licence to create noise nuisance. Currently in the absence of any HVAC noise monitoring, HVAC noise attenuation measures or Kirklees Council planning HVAC plant operation planning conditions being imposed by the laissez-faire non-enforcement Kirklees Council the in breach HVAC plant can be run at any times of day or night choose. Weekends when they have urgent design projects for example but there would be nothing to prevent it running throughout the night as they are now an international design house and distributor with linked offices in the Asia Pacific region. [Note 2]. Kirklees Council have a track record of failing to monitor developments for example the installed HVAC was ignored despite multiple site inspections of Alexandra Road West by council officers

and *pre-construction conditions* that were attached to planning permission 2015/91993' have been entirely flouted due to a failure of monitoring and oversight by Kirklees Council.

6. We suspect that [redacted] have deliberately chosen to focus on road traffic noise to the exclusion of the HVAC mechanical plant noise because Kirklees Council have no legislative control over road traffic noise / revving engines on the public highway. All installed HVAC plant which could potentially impact the 6 back-to-back houses should have been switched to constant continuous operation to enable accurate representative measurements to be made. This did not occur.
7. All HVAC plant should have been measured at a specific stated distance with all units operating simultaneously during the measurement period. A description of the noise character [BS4142 2014 noise character corrections] of the units during start up, run down and defrost cycling should also have been provided.
8. With respect to external amenity the stated scope of BS 4142 (2014) is quite precise in that it provides a method for assessing whether an industrial type of noise source (i.e., the HVAC mechanical plant installed on the rear of Crown House) in industrial or commercial buildings is likely to give rise to complaints from residents, based on the noise level outside their dwelling. Thus BS 4142 (2014) is directly applicable to the present circumstances with respect to *external amenity* where seven HVAC units are approximately 10 metres from the boundary of a group of houses with exterior spaces.
9. BS4142 2014 noise character corrections would be specifically applicable to outside amenity issues because they are specifically stated to apply to immediately outside the property but have not been mentioned. [redacted] acts as though simply mentioning that the HVAC exists is wholly adequate with respect to an accurate and representative environmental noise assessment. It is not.
10. [redacted] assumes on page 10
"that traffic noise and plant noise at the front and rear façade of the proposed development will be significantly lower in the night time periods. Therefore if internal noise criteria can be met for day time noise levels then it should also be achieved in the night time periods."

This assumption is not supported by measured data from [redacted].
Night time noise criteria are significantly lower than day time. Critical periods when people are endeavouring to go to sleep (22:00 to 23:00) and are in the light sleep phases prior to waking (4:30 to 7:00 have been excluded).
11. In the report [redacted] have minimised [redacted] working hours to 9 - 5pm but people are frequently working at the Crown House office until at least until 7pm. We will endeavour to take photographs of cars still at the offices over the next week but suspect that from now until the 8 March 2019 closing date for submissions the out of hours business activities will be put on hold.

In Relation to the Road Traffic Noise Measurement:

12. The potential for underestimation of the level of road traffic noise and disturbance by the choice of restricted measurement time frame followed by a simplistic conversion of L10(3Hour) to Laeq,16Hour. The measurement period chosen 11:47 to 15:30 specifically excluded the elevated RTN levels of the morning and evening rush hour traffic phases of the day. It also excludes the 22:00 – 23:00 period when many people retire to sleep which should be assessed for RTN levels and likelihood of disturbance. These are more robustly represented by the EU Noise Indices.

Section III of CRTN provides guidance on the measurement of road traffic noise. A shortened procedure is provided in Paragraph 43 which may be used if the future predicted values of L10(18hr) estimated in this way are in excess of 69.0 dB(A) or below 66.0 dB(A).

The shortened measurement procedure involves take measurements of L10(1 Hour) over any three consecutive hours between 10:00 and 17:00 and calculating the arithmetic mean to give a value of L10(3 Hour). The value of L10(18 Hour) is then calculated as follows:

$$L10(18 \text{ Hours}) = L10(3 \text{ Hour}) - 1 \text{ dB(A)}$$

PROJECT REPORT PR/SE/451/02 CONVERTING THE UK TRAFFIC NOISE INDEX LA10,18h TO EU NOISE INDICES FOR NOISE MAPPING by P. G. Abbott & P. M. Nelson (TRL Limited) Prepared for: Project Record: EPG 1/2/37 – Adapt UK Road Traffic Noise Calculation Method For Noise Mapping Client: AEQ Division, DEFRA [Mr Alan Bloomfield]

A third method is provided that can be used to determine the EU indices where additional traffic information is not available. The method allows CRTN to be used to produce values of LA10,18h which are then converted directly to the EU indices. ***However, this method relies on the assumption that different road types will, on average, produce a reasonably consistent diurnal flow pattern. For roads where significant deviations in the average conditions occur then errors in conversion may result.***

2.1.2 EU noise indices

The EU has proposed two noise indicators L_{den} and L_{night} . These are based on the recommendations of the Working Group 'Indicators' which were approved by the Steering Group (Commission of the European Communities, 1999). The primary noise indicator is the day-evening-night level L_{den} that is an indicator of annoyance from long-term exposure to noise, whereas, L_{night} is an overall night-time indicator related to 'self-reported sleep disturbance' again from long-term exposure. Both indicators are based on the scale L_{Aeq} . This is the equivalent sound level that if maintained would cause the same sound energy to be received as the actual sound over the same period.

L_{day} is the A-weighted equivalent noise level over the 12-hour day time period from 07:00 to 19:00 hours.

L_{evening} is the A-weighted equivalent noise level over the 4-hour evening period from 19:00 to 23:00 hours.

L_{night} is the A-weighted equivalent noise level over the 8-hour night time period from 23:00 to 07:00 hours.

L_{evening} and L_{night} have a 5 and 10 dB weighting applied to each respectively to take account of the difference in annoyance due to the time of day. The A-weighted equivalent noise level L_{night} , as defined above, is also used as a separate noise indicator in the Directive as a metric for the assessment of sleep disturbance but does not include the 10 dB weighting that is applied when determining the noise indicator L_{den} .

Brüel and Kjær application notes state "... community noise exposure can be assessed by measurement of L_{eq} over a whole day, or by taking "period" L_{eq} measurements of representative intervals within typical periods (e.g. quiet periods during daytime, rush hours, evening, night).

13. This rear facade glazing minimum sound attenuation of 25.1 dB R_w and 20.1 dB R_w ; recommendation does nothing to address *outside amenity issues which include noise nuisance and visual amenity of the surrounding environs*.
14. measurements to the nearest 0.1 dB use unrealistically high degrees of precision that creates a false impression of measurement certainty and scientific rigour [Note 3.]. For example the Brüel & Kjær type 4231 microphone precisely calibrated to the manufacturer's data has a ± 1.9 dB range of achievable accuracy for a class 1 calibrated instrument set, so claims of 0.1 dB accuracy do not comply with measurement guidelines and would not stand up in court. The Brüel & Kjær measurement microphones are recognised as being some of the most accurate produced by any manufacturer.[Note 4]. The quoted figures should have been rounded up to the nearest 1 dB and a confidence level stated.
15. The recommendation of remediation for the rear properties is an implicit / tacit admission that the HVAC plant installation *does constitute a noise nuisance* as these properties are screened by the front houses from high levels of road traffic noise. Again this is an issue for both Kirklees Council Planning Enforcement and Environmental Health noise and pollution enforcement but We anticipate complete inaction.
16. We are not convinced the report adequately addresses the outside amenity issues especially in relation to the suggested moving of garden areas to the rear to shelter the outside spaces from road traffic noise where the HVAC mechanical plant is located.
17. The mechanical plant is in breach with respect to visual amenity i.e. the HVAC installation is an eyesore as well as a source of environmental noise.
18. We recognise that the calculated level of 47 dBA (up to 51 DdBA if the installed Mitsubishi Mr Slim double unit emits higher sound pressure levels than the mid power Mitsubishi Mr Slim double unit benchmarked) without noise character corrections is a medium environmental noise nuisance level. However, We are

firmly of the view that the HVAC installation should be treated at source and it is established in case law that even if an installation has planning permission that permission is not a licence to create a noise nuisance [Note 5 (i)].

19. It is well established that where practicable treating noise sources at source represents best practice, thereby preventing all future environmental noise issues, rather than imposing conditions in a piecemeal fashion. This is not achievable for road traffic noise RTN but is wholly achievable for the HVAC installation with respect to both noise *and visual amenity*.
20. Also of relevance is the potential cost burden imposed on a company for noise attenuation measures versus their social responsibility to minimise environmental noise pollution; in this instance the lessee of Crown House, is part of the JD Sports Fashion plc group of companies – group revenues £3,161.4 million 2018. Profit before tax £294.5 million 2018.
21. It seems to us that the Kirklees Council Planning and EHO are adopting an entirely non proactive approach of non enforcement. We suspect under their powers Kirklees Council Planning and EHO could require to switch on all the installed HVAC plant and carry out their own detailed noise assessment. But We have been informed by the EHO enforcement officer that they would only proceed if the mechanical plant were in full operation and would not compel the switching on of the plant to make noise measurements. So We must await a blisteringly hot summer that compels to run all their HVAC units over multiple days.

Condition 3 of Planning Permission 2015/91993 is important in relation to the provision of socially affordable housing.

We believe that the provision of high quality socially affordable housing is vitally important. As currently built the 6 back-to-back houses do not protect future occupants from Road Traffic Noise RTN and HVAC noise and negative visual amenity impact.

By allowing planning application 2018/94102 the council planning department will be flouting the requirements of Policy H10 of the Council's Unitary Development Plan and the Council's Supplementary Planning Document 2 (Affordable Housing). This is a pre-commencement condition as it may require the completion of the section 106 Obligation but this pre-commencement condition has been ignored.

3. No material operation as defined in Section 56(4)(a)-(d) of the Town & Country Planning Act 1990 shall be carried out to commence the development pursuant to this planning permission until arrangements for the provision of affordable housing have been submitted to and approved in writing by the Local Planning Authority unless otherwise approved in writing by the Local Planning Authority, the arrangements shall cover the following matters:-

- a) The number and type of affordable housing units to be provided.
- b) The layout and disposition of the units affordable housing to be provided.
- c) The timescale for the implementation and completion of the affordable housing units;
- d) The mechanism for ensuring that the affordable housing units remain affordable for both the initial and subsequent occupiers.

Non-compliance with council planning policies / government planning guidance and legislation

If Planning Application 2018/94102 is allowed then the Kirklees Council, Planning and Environmental Pollution and Noise Control will be allowing a planning permission which facilitates the circumvention of Kirklees Council's own planning, environmental pollution and noise controls.

This may in consequence breach current UK environmental noise legislation at the six back-to-back houses in Alexandra Road West. We believe this will be a fundamental breach of duty by Kirklees Council, potentially Ultra Vires and may be actionable in law.

Condition 9 of Planning Permission 2015/91993

If planning application 2018/94102 is allowed then there will be a clear breach of duty on the part of Kirklees Council to ensure the integration of any necessary noise mitigation features within the new development, which may be necessary to ensure residential amenity and to meet Policies D2 and EP4 of the Kirklees Unitary Development Plan, and Chapter 11 of the National Planning Policy Framework.

Condition 9 of Planning Permission 2015/91993 specifically states:

“Before development commences a report specifying the measures to be taken to protect the new residential properties from noise generated from the business activities at Crown House located to the south east of the proposed development, shall be submitted to and approved in writing by the Local Planning Authority.”

and his agents have breached condition 9 and condition 3 below and are manoeuvring via a subsequent planning application to circumvent effective planning and environmental pollution and noise controls.

Why is a detailed and objective environmental noise assessment of the HVAC installation and accurate report necessary? The central assertion that Crown House does not present an environmental noise nuisance is false. There are seven large ***untreated*** commercial Heating Ventilation and Air Conditioning (HVAC) outdoor condensing / air conditioning units installed on the rear facade of the building which have not been granted planning permission. These units are loud (47 dBA MINIMUM at 15m) and have neither vibration

isolation nor noise attenuation.

However, if the planning department allow the 2018/94102 application to set aside condition 9 and condition 3 and the developer / owner of Crown House and his agents to knowingly flout the original conditions attached to the planing permission the council may well be subject to subsequent legal proceedings due to a failure to protect the amenity of the occupants of the new back-to-back houses and ensure an acceptable noise environment in the gardens (daytime), bedrooms (night-time) and other habitable rooms of the new back-to-back development due to the close proximity of the new dwellings to a large and wholly unattenuated, unsightly HVAC installation *that has never been granted planning permission.*

The external spaces are located at the front of the six back-to-back houses along Longwood Road. This ignores the recommendation contained within the

that these external garden areas are located at the rear of the six back-to-back houses due to the screening effect of the buildings.

A significant shortcoming of this suggestion is that then the external garden areas will be subject to noise from the HVAC mechanical plant.

Notes

Note 1: Using a calibrated Bosch GLM 250 VF Professional laser measure and Manfrotto tripod we obtained a measurement of 16 metres to nearest sensitive receptor (NSR) of the rear three properties from the centre of the HVAC units. The Bosch GLM 250 VF Professional laser instrument is rated up to 250 metres outdoors.

Note 2: From the website

“Based around a tri-pillar strategy, Focus consists of fashion, wholesale and international divisions... driving sales internationally via a combination of our own subsidiary businesses and an appointed distributor network.

Continued investment provides Focus with the financial strength to grow both nationally and internationally; building collaborative relationships with brands and customers

Now with offices in the Asia Pacific region, the business is currently sourcing over 10 million units across apparel, footwear and accessories, which we supply to some of the most powerful high street retailers in the world.”

Note 3: To quote

“Although sound level meters generally show the measured level to 0.1dB resolution, this

is not the accuracy of the measurement for a variety of reasons. In addition to measurement uncertainty, which is likely to be somewhat more than 1dB, it should be noted that the sound level at any location varies often by many dB(A), even at the same time of the day or night. This can be due to many different factors including meteorological conditions, noise source characteristics such as equipment operation, human or animal activity and even foliage. This does not mean that there is an ‘error’ in the measurements, but that even under apparently ideal measurement conditions the ‘measurement uncertainty’ will inevitably be several dB(A). Good measurement practice such as ensuring appropriate wind speed and direction, no significant precipitation effects or unrepresentative measurement conditions, using ‘accurate’ reliable instrumentation to measure appropriate parameters, will reduce this uncertainty and the associated variability in measurements, but it is still to be expected that measurements taken under apparently similar conditions on different occasions will differ considerably, and usually by somewhat more than the variation noted during the quieter part of any one night, for example.”

Also **Proceedings of the Institute of Acoustics, Oxford, 2005**

CONSIDERING UNCERTAINTY WHEN PERFORMING ENVIRONMENTAL NOISE MEASUREMENTS (2005) G.Kerry Acoustics Research Centre, University of Salford, M5 4WT, D.Waddington Acoustics Research Centre, University of Salford, M5 4WT

The Quantification of Environmental Noise Uncertainties

The uncertainties associated with environmental noise measurements need to be quantified in an acceptable and uniform manner. To achieve this two quantities may be specified; the “confidence interval” which is the margin within which the true value being measured can be said to lie, and the “level of confidence” which is a number expressing the degree of confidence in the result. So for example, the noise level is 55dBA $\pm$ 5 dBA with a confidence of 95%.

Note 4: Quoted on page 62 - DTI Project: 2.2.1 - National Measurement System Programme for Acoustical Metrology ‘*A Good Practice Guide on the Sources and Magnitude of Uncertainty Arising in the Practical Measurement of Environmental Noise Edition 1a – May 2007*’ N. J. Craven, G. Kerry School of Computing, Science & Engineering The University of Salford Salford M5 4WT

Originally published in WILLIAMS, MARTIN, *Environmental Noise and Vibration Measurement and Standards*, 1997, Brüel and Kjær

Component of uncertainty	Type 0 (dB)	Type 1 (dB)	Type 2 (dB)	Type 3 (dB)
Application	Laboratory	Laboratory & field use	General field applications	Field noise surveys
Absolute accuracy at reference conditions*	± 0.4	± 0.7	± 1.0	± 1.5
Warm up period (1	± 0.2	± 0.3	± 0.5	± 0.5

hour)				
Directional effects 30° from 0° incidence	± 0.5	± 1.0	± 2.0	± 4.0
Frequency weighting (100Hz- 1KHz)	± 0.7	± 1.0	± 1.5	± 2.0
Level range control	± 0.3	± 0.5	± 0.7	± 1.0
Slow/fast time weighting (detector- indicator)	± 0.5	± 0.5	± 1.0	± 1.5
Atmospheric pressure (+/- 10%)	± 0.3	± 0.3	± 0.5	± 0.5
Temperature (-10° to +50°C)	± 0.5	± 0.5	± 0.5	± 0.5
Humidity (30- 90%)	± 0.5	± 0.5	± 0.5	± 1.0
Calibrator *	± 0.2	± 0.2	± 0.2	± 0.2
Total estimated uncertainty (root of the sum of the squares)	± 1.4	± 1.9	± 3.1	± 5.2

Reference conditions, 20° C, 65% relative humidity, 1013 mbars atmospheric pressure, with plane progressive waves arriving at the microphone from one direction (typically 0° incidence) at 94 dB.

* This applies to a Brüel & Kjær type 4231 calibrated to the manufacturer's data. Many environmental noise standards specify that sound level meter of type 2 or better is required (e.g. BS 4142 : 1997), however under certain circumstances the use of cheaper, less accurate sound level meters may be acceptable. When measuring in the field, it is not unusual for the overall measurement uncertainty to be sufficiently large as to render the difference between using a type 1 or type 2 meter insignificant. Users should be aware that the tolerances generally widen towards the extremes of measurement ranges (low- or high frequency and/or level).

Note 5: In England and Wales two judgements may serve to define the test of Nuisance with respect to legal precedent. Lord Neuberger in the Supreme Court judgement in

Coventry v Lawrence [Coventry and others (Respondents) v Lawrence and another (Appellants) [2014] UKSC 13, on appeal from [2012] EWCA Civ 26]. And Hunter v Canary Wharf [1998] 1 WLR 434 House of Lords] Lord Neuberger in Coventry v Lawrence stated nuisance is an action

“which causes an interference with the claimant’s reasonable enjoyment of his land, or to use a slightly different formulation, which unduly interferes with the claimant’s enjoyment of his land . . . what is reasonable according to the ordinary usages of mankind living in society, or more correctly in a particular society.”

There is a more detailed discussion in the House of Lords decision on Hunter and others v Canary Wharf [Hunter v Canary Wharf [1998] 1 WLR 434 House of Lords].

In the recent case of R v Winvest Ltd [Note 6] and Another at Kirklees Magistrates Court which has specific local relevance the magistrate said “to be an actionable nuisance the noise would have to interfere to an unreasonable degree with the personal comfort of, or injure the health of, the reasonable person’s use and enjoyment of their land — having regard to the ordinary comforts of human existence in the particular location. This is an infinitely variable test. Every case is fact specific”.

Note 6: In R v Windvest at Kirklees Magistrates Court, six environmental health officers had been to listen to a wind turbine at various times and five of them had considered it to be a nuisance. The defendants were unmoved by this and believed that without any noise measurements to show that the level of noise was above a certain threshold, they could not possibly be shown to be causing a nuisance. The judge disagreed. The subjective judgement of the neighbours and the six environmental health officers was sufficient. Interestingly, none of the six environmental health officers appeared to have been treated essentially as an expert witness but more like lay witnesses describing the noise though they did, in all but one case, express the opinion that it was a statutory nuisance.

Version 1a, May 2007 Page 62 © University of Salford

Signed:

Signed: