

**THE FORMER HAMPSTEAD  
POLICE STATION  
26 ROSSLYN HILL,  
LONDON,  
NW3 1PD**

**VC-103333-AA-RP-1110  
R00**

**18<sup>TH</sup> AUGUST 2020**

**PROOF OF EVIDENCE ON NOISE**

**DANI FIUMICELLI**

**FOR THE LOCAL PLANNING AUTHORITY**

**PLANNING PUBLIC INQUIRY INTO REFUSAL OF PLANNING PERMISSION FOR  
CHANGE OF USE OF THE SITE FROM A POLICE STATION (SUI GENERIS) TO A  
ONE-FORM ENTRY SCHOOL (USE CLASS D1) FOR 210 PUPILS AND  
BUSINESS/ENTERPRISE SPACE (CLASS B1) INCLUDING ALTERATIONS AND  
EXTENSIONS TO THE REAR AND ASSOCIATED WORKS.**

**PINS REF: APP/X5210/Y/20/3248003 & APP/X5210/W/20/3248002**

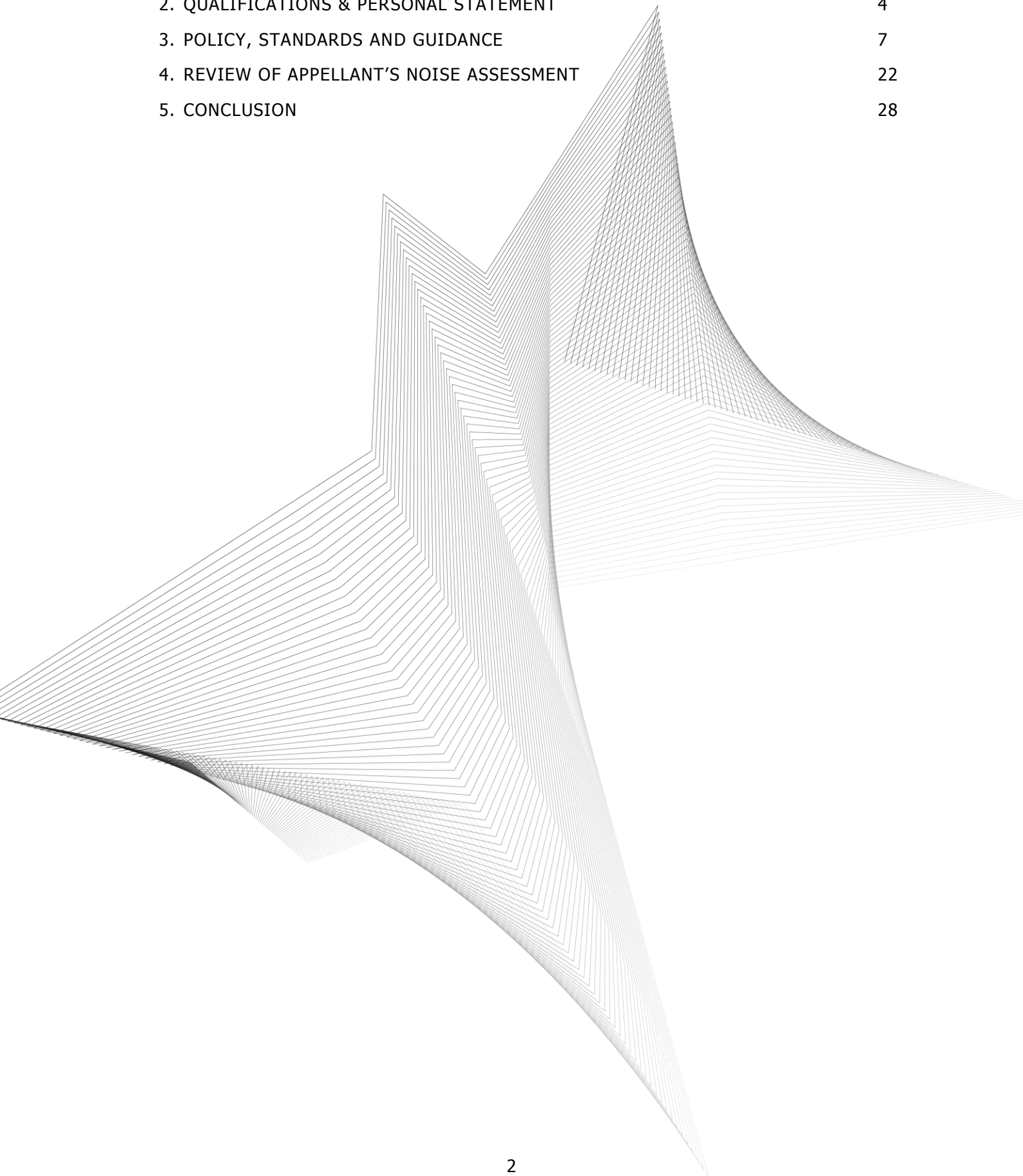
**PLANNING APPLICATION No: 2019/2375/P**

**LISTED BUILDING CONSENT No: 2019/2491/L**

**VANGUARDIA**  
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## CONTENTS

|   |    |
|---|----|
| 1. INTRODUCTION & REASONS FOR REFUSAL     | 3  |
| 2. QUALIFICATIONS & PERSONAL STATEMENT    | 4  |
| 3. POLICY, STANDARDS AND GUIDANCE         | 7  |
| 4. REVIEW OF APPELLANT'S NOISE ASSESSMENT | 22 |
| 5. CONCLUSION                             | 28 |



18TH AUGUST 2020

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## 1. INTRODUCTION & REASONS FOR REFUSAL

### INTRODUCTION

- 1.1. This proof of evidence is submitted to the inquiry on behalf of the local planning authority in relation to noise issues associated with the proposal for change of use of the site at 26 Rosslyn Hill, Rosslyn Hill, London, NW3 1PD from a police station (sui generis) to a one-form entry school (Use Class D1) for 210 pupils and business/enterprise space (Class B1) including alterations and extensions to the rear and associated works.

### REASONS FOR REFUSAL

- 1.2. There are 3 reasons for refusal given in the decision notice; the noise related reason is reproduced below:

*"The proposed development, by virtue of the proximity of its outdoor amenity space to neighbouring residential properties would result in an unacceptable increase in noise disturbance to the detriment of the amenity of neighbouring residents contrary to policy A1 (Managing the impact of development) of the Camden Local Plan 2017."*

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18TH AUGUST 2020

## 2. QUALIFICATIONS & PERSONAL STATEMENT

### 2.1. Qualifications and Experience

2.2. I am a technical director of Vanguardia Limited, a company whose services include specialising in the field of acoustics, noise, and vibration. I was awarded the Chartered Institute of Environmental Health's Diploma in 1986 and a Master of Science (MSc) in Environmental Acoustics from the Southbank University in 1999; and have over 30 years of experience in the field of acoustics having worked as an Environmental Health Officer in London from 1986 until 2002, and as an acoustic consultant in the private sector since then. I am a full member of the Institute of Acoustics (IoA) and the Chartered Institute of Environmental Health Officers (CIEH), and I am a member of the IoA Environmental Noise Committee. I was chair of a committee set up by the IOA, the Association of Noise Consultants and the CIEH which published good practice guidance regarding noise sensitive development in May 2017 and am a member of a working groups revising the IOA Good Practice Guide to Noise from Place of Entertainment and from outdoor concerts. I have a wide range of experience in all technical aspects related to acoustics and have managed numerous projects as well as presenting evidence at planning committees and appeals, legal proceedings, public inquiries and House of Commons and Scottish Parliament Scrutiny Committees. I have presented technical papers and written articles nationally and internationally on noise and acoustics covering a wide range of aspects. My overall project experience includes being the project director or manager and participant in Environmental Impact Assessments for residential schemes, schools, airports, road transport, guided transport (trams and buses), light and heavy railway projects, renewable energy, hospital development, mixed developments, harbour developments, leisure developments, sport stadiums, and commercial and industrial developments.

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18TH AUGUST 2020

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- 2.3. I have visited the vicinity of the proposed scheme and viewed the existing buildings and the relationship with adjoining and nearby residential properties from publicly accessible areas around the scheme.

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## 2.4. Personal Statement

I, Dani Fiumicelli declare that:

- 2.4.1. I understand that my duty in providing this statement and giving evidence is to help the Inquiry, and that this duty overrides any obligation to the party by whom I am engaged or the person who has paid or is liable to pay me or my employers. I confirm that I have complied and will continue to comply with my duty.
- 2.4.2. I confirm that insofar as the facts stated in this statement are within my own knowledge I have made clear which they are, and I believe them to be true, and that the opinions I have expressed represent my true and complete professional opinion.
- 2.4.3. I have endeavoured to include in my statement those matters, of which I have knowledge or which I have been made aware, that might adversely affect the validity of my opinion. I have clearly stated any qualifications to my opinion.
- 2.4.4. I have shown the sources of all information I have used.
- 2.4.5. I have not without forming an independent view included or excluded anything which has been suggested to me by others; including my instructing clients and their lawyers.
- 2.4.6. I will notify those instructing me immediately and confirm in writing if for any reason my statement requires any correction or qualification.

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## 3. POLICY, STANDARDS AND GUIDANCE

### NATIONAL POLICY AND GUIDANCE

#### **Noise Policy Statement for England (NPSE)**

- 3.1. NPSE seeks to clarify the underlying principles and aims in existing policy documents, legislation and guidance that relate to noise. The statement applies to all forms of noise, including environmental noise, neighbour noise and neighbourhood noise.
- 3.2. The statement sets out the long-term vision of the Government's noise policy, which is to "promote good health and a good quality of life through the effective management of noise within the context of policy on sustainable development".
- 3.3. The policy promotes the effective management and control of noise, within the context of Government policy on sustainable development and thereby aims to:
  - avoid significant adverse impacts on health and quality of life;
  - mitigate and minimise adverse impacts on health and quality of life; and
  - where possible, contribute to the improvements of health and quality of life.
- 3.4. The statement adopts established concepts from toxicology that are currently being applied to noise impacts. The concept details noise levels, at which the effects of an exposure may be classified into a specific category. The classification categories as detailed within the NPSE are as follows:

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18TH AUGUST 2020

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- No Observed Effect Level (NOEL) - the level below which no effect can be detected. Below this level no detectable effect on health and quality of life due to noise can be established;
- Lowest Observable Adverse Effect Level (LOAEL) - the level above which adverse effects on health and quality of life can be detected; and
- Significant Observed Adverse Effect Level (SOAEL) - the level above which significant adverse effects on health and quality of life occur.

3.5. It is recognised that SOAEL does not have a single objective noise-based level that is applicable to all sources of noise in all situations and therefore the SOAEL is likely to be different for different sources, receptors and at different times of the day.

3.6. No guidance has been issued at the time of writing to identify the noise levels that represent SOAEL and LOAEL for typical noise sources and receptors.

#### **National Planning Policy Framework (NPPF)**

3.7. Paragraph 170 of the NPPF advises that:

*"170 (e) Planning policies and decisions should contribute to and enhance the natural and local environment by:*

*"preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.*

3.8. Paragraph 180 of the NPPF comments further on noise as follows:

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*“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*

- *mitigate and reduce to a minimum, potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life<sup>60</sup>;*

Foot Note 60 - See Explanatory Note to the Noise Policy Statement for England (Department for Environment, Food & Rural Affairs, 2010).

### **National Planning Practice Guidance (NPPG)**

- 3.9. The Planning Practice Guidance (PPG) is issued by the Department of Communities and Local Government and at Paragraph: 005 Reference ID: 30-005-20140306 expands on the use of Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL) as follows:

*LOAEL - “Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows 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”.*

- 3.10. Thus, the PPG is explicit in saying that although noise can be heard, the effects have been mitigated and minimised as far as is practicable and this is the lower limit to what policy requires i.e. there is no policy imperative to achieve Noise Observed Effect Level (NOEL) i.e. for noise to be inaudible.

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3.11. The PPG goes on to describe the effects of SOAEL as follows:

*"If the exposure is above this level the planning process should be used to avoid this effect occurring, by use of appropriate mitigation such as by altering the design and layout. Such decisions must be made taking account of the economic and social benefit of the activity causing the noise, but it is undesirable for such exposure to be caused."*

3.12. In the same section the PPG also goes on to identify unacceptable noise exposure as:

*"At the highest extreme, noise exposure would cause extensive and sustained changes in behaviour without an ability to mitigate the effect of noise. The impacts on health and quality of life are such that regardless of the benefits of the activity causing the noise, this situation should be prevented from occurring."*

3.13. At Paragraph: 002 Reference ID: 30-002-20140306 the NPPG states that noise can override other planning considerations; with the qualification that: *"but neither the Noise Policy Statement for England nor the National Planning Policy Framework (which reflects the Noise Policy Statement) expects noise to be considered in isolation, separately from the economic, social and other environmental dimensions of proposed development."*

3.14. The NPPG at Paragraph: 003 Reference ID: 30-003-20140306 advises that when dealing with noise aspects of planning applications LPAs should "consider:

- whether or not a significant adverse effect is occurring or likely to occur;
- whether or not an adverse effect is occurring or likely to occur; and
- whether or not a good standard of amenity can be achieved".

3.15. Like the NPPF and NPSE the NPPG does not contain any noise level decibel based standards or guidelines.

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3.16. At paragraph 006 Reference ID: 30-006-20141224 the NPPG also recognises that:

- where applicable, the cumulative impacts of more than one source should be taken into account along with the extent to which the source of noise is intermittent and of limited duration;
- The subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected;
- There are no specific objective noise-based measures or values that define when the "significant observed adverse noise level" applicable to all sources of noise is crossed;
- The impact on those affected by noise will depend on how various factors combine in any particular situation. The NPPG goes on to explain that factors including the following are important;
  - *the source and absolute level of the noise together with the time of day it occurs. Some types and level of noise will cause a greater adverse effect at night than if they occurred during the day – this is because people tend to be more sensitive to noise at night as they are trying to sleep. The adverse effect can also be greater simply because there is less background noise at night;*
  - *for a new noise making source, how the noise from it relates to the existing sound environment;*
  - *for non-continuous sources of noise, the number of noise events, and the frequency and pattern of occurrence of the noise;*
  - *the spectral content of the noise (i.e. whether or not the noise contains particular high or low frequency content) and the general character of the noise (i.e.*

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*whether or not the noise contains particular tonal characteristics or other particular features), and;*

- *the local arrangement of buildings, surfaces and green infrastructure, and the extent to which it reflects or absorbs noise.*
- At para [005] the NPPG provides a qualitative description of “*How can it be established whether noise is likely to be a concern*” and includes a table summarising a noise exposure hierarchy in subjective terms which applies to all noise sources in any situation, including in this case.

## **The London Plan**

3.17. The following policy from the London Plan is relevant.

POLICY 7.15 REDUCING AND MANAGING NOISE, IMPROVING AND ENHANCING THE ACOUSTIC ENVIRONMENT AND PROMOTING APPROPRIATE SOUNDSCAPES<sup>1</sup>

Strategic A -The transport, spatial and design policies of this plan will be implemented in order to reduce and manage noise to improve health and quality of life and support the objectives of the Mayor’s Ambient Noise Strategy.

*Planning decisions B Development proposals should seek to manage noise by:*

**a** avoiding significant adverse noise impacts on health and quality of life as a result of new development;

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<sup>1</sup> Soundscape definition - “*acoustic environment as perceived or experienced and/or understood by a person or people, in context*” From BS ISO 12913-1:2014, Acoustics — Soundscape — Part 1: Definition and conceptual framework

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**b** mitigating and minimising the existing and potential adverse impacts of noise on, from, within, as a result of, or in the vicinity of new development without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens on existing businesses;

**c** improving and enhancing the acoustic environment and promoting appropriate soundscapes (including Quiet Areas and spaces of relative tranquillity);

**d** separating new noise sensitive development from major noise sources (such as road, rail, air transport and some types of industrial development) through the use of distance, screening or internal layout – in preference to sole reliance on sound insulation;

**e** where it is not possible to achieve separation of noise sensitive development and noise sources, without undue impact on other sustainable development objectives, then any potential adverse effects should be controlled and mitigated through the application of good acoustic design principles;

**f** having particular regard to the impact of aviation noise on noise sensitive development;

**g** promoting new technologies and improved practices to reduce noise at source, and on the transmission path from source to receiver.

*LDF preparation C*

Boroughs and others with relevant responsibilities should have policies to:

**a** manage the impact of noise through the spatial distribution of noise making and noise sensitive uses;

**b** identify and nominate new Quiet Areas and protect existing Quiet Areas in line with the procedure in Defra's Noise Action Plan for Agglomerations.

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3.18. The Intend to Publish version of the London Plan covers noise as follows:

Policy D14 Noise

A In order to reduce, manage and mitigate noise to improve health and quality of life, residential and other non-aviation development proposals should manage noise by:

- 1) avoiding significant adverse noise impacts on health and quality of life
- 2) reflecting the Agent of Change principle as set out in Policy D13 Agent of Change
- 3) mitigating and minimising the existing and potential adverse impacts of noise on, from, within, as a result of, or in the vicinity of new development without placing unreasonable restrictions on existing noise-generating uses
- 4) improving and enhancing the acoustic environment and promoting appropriate soundscapes (including Quiet Areas and spaces of relative tranquillity)
- 5) separating new noise-sensitive development from major noise sources (such as road, rail, air transport and some types of industrial use) through the use of distance, screening, layout, orientation, uses and materials – in preference to sole reliance on sound insulation
- 6) where it is not possible to achieve separation of noise-sensitive development and noise sources without undue impact on other sustainable development objectives, then any potential adverse effects should be controlled and mitigated through applying good acoustic design principles
- 7) promoting new technologies and improved practices to reduce noise at source, and on the transmission path from source to receiver.

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18TH AUGUST 2020

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B Boroughs, and others with relevant responsibilities, should identify and nominate new Quiet Areas and protect existing Quiet Areas in line with the procedure in Defra's Noise Action Plan for Agglomerations.

## LB CAMDEN LOCAL PLAN

3.19. The LB Camden Local Plan considers noise in Policies A1 Managing the impact of development and A4 Noise and vibration, which are reproduced below

### ***Policy A1 Managing the impact development***

*The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity.*

*We will:*

*a. seek to ensure that the amenity of communities, occupiers and neighbours is protected;*

*b. seek to ensure development contributes towards strong and successful communities by balancing the needs of development with the needs and characteristics of local areas and communities;*

*c. resist development that fails to adequately assess and address transport impacts affecting communities, occupiers, neighbours and the existing transport network; and*

*d. require mitigation measures where necessary.*

*The factors we will consider include:*

*e. visual privacy, outlook;*

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*f. sunlight, daylight and overshadowing;*

*g. artificial lighting levels;*

*h. transport impacts, including the use of Transport Assessments, Travel Plans and Delivery and Servicing Management Plans;*

*i. impacts of the construction phase, including the use of Construction Management Plans;*

*j. noise and vibration levels;*

*k. odour, fumes and dust;*

*l. microclimate;*

*m. contaminated land; and*

*n. impact upon water and wastewater infrastructure.*

**Policy A4 Noise and vibration**

*The Council will seek to ensure that noise and vibration is controlled and managed.*

*Development should have regard to Camden's Noise and Vibration Thresholds (Appendix 3).*

*We will not grant planning permission for:*

*a. development likely to generate unacceptable noise and vibration impacts; or*

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*b. development sensitive to noise in locations which experience high levels of noise, unless appropriate attenuation measures can be provided and will not harm the continued operation of existing uses.*

*We will only grant permission for noise generating development, including any plant and machinery, if it can be operated without causing harm to amenity. We will also seek to minimise the impact on local amenity from deliveries and from the demolition and construction phases of development.*

3.20. Policy A4 references Camden's Noise and Vibration Thresholds in Appendix 3 of the local plan, which are discussed in the following section.

### **Noise and Vibration Thresholds in Appendix 3 of the local plan.**

3.21. Appendix 3 of the local plan includes a series of noise level based thresholds linked to the concepts of NOEL, LOAEL and SOAEL for various categories of noise and for noise sensitive and noise generating development. None of the thresholds listed apply to noise from schools.

3.22. The Appellant relies on the noise thresholds for entertainment premises from Appendix 3 of the local plan, as human voices are listed among the many noise sources listed for consideration for these types of development and the primary noise issue in this case is the sound of children in the outdoor areas of the proposed school at play time, during PE and other external lessons.

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18TH AUGUST 2020

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3.23. However, the Appellant's approach is incorrect, not simply because Appendix 3 of the local plan is explicit that the thresholds only apply to noise from Entertainment Premises, but also for the following reasons:

- The thresholds only apply to gardens used for amenity purposes and they have no relevance to impacts inside dwellings.
- The Appendix requires LAeq,T and LMax,T noise metrics to be assessed, whereas the Appellant's advisers have only assessed the LAeq,T noise metric.
- The Appendix also requires the frequency spectrum to be considered, but this has not been done.
- Entertainment premises in the Borough tend to be concentrated in town centres with higher ambient and background noise levels, and much more mixed and less tranquil soundscapes than at the residential properties adjacent to and near to the former Police station. Consequently, the impact of human voices from places of entertainment can be masked, at least in part, by the existing noise levels, and subsumed in the already somewhat hectic soundscape that tends to prevail in town centres in the Borough.

## POLICY CONCLUSIONS

3.24. In summary National, London wide and local planning policy and guidance require that:

- The worst, unacceptable, effects of noise on its own that remain despite mitigation, must be prevented; and,

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18TH AUGUST 2020

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- That the lesser significant effects of noise should be avoided; and,
- The least effects of adverse impacts should be mitigated and minimised;
- A good standard of amenity shall be achieved;
- Residential amenity and quality of life shall be protected.

## ACOUSTIC STANDARDS AND GUIDANCE

- 3.25. As alluded to above, the primary noise issue in this case is from children in outdoor play areas before school, at mid-morning, lunch time and afternoon breaks, after school and during PE and external lessons.
- 3.26. Whilst there are guidelines and standards that can be used for the assessment of noise from many sources, none specifically apply to noise from outdoor areas at schools or from children playing or engaged in physical activities.
- 3.27. In these circumstances the assessor must develop assessment methods and criteria unique to the case being considered. When doing this it is important to consider the types of noise assessment methods, metrics and criteria that may be applicable, and how these might influence the assessment outcome, which fall into three broad categories as shown in the table below:

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TABLE 1: - TYPES OF NOISE ASSESSMENT

| Type of Noise Assessment  |  |  |
|---|--|--|
| <i>Change Comparisons - Relative</i>  | <i>Absolute/Fixed</i>  | <i>Context comparisons - Relative</i>  |
| Use the change in a noise index from before and then after noise control action or development takes place. | Compare the noise level of the source in question with Benchmarks / thresholds of effects. | Compare the specific sound levels, corrected for elements of the nature and character of the noise that aggravate its impact, arising after noise control action or development against appropriate indicators of the pre-existing situation before the noise control action or development takes place. |

3.28. The Appellant’s noise assessment only considers Absolute/Fixed noise assessment criteria, albeit inappropriately derived by applying the Local Plan thresholds for noise from places of entertainment out of scope to the noise from children outdoors. A drawback with only considering Absolute/Fixed noise assessment criteria is that it does not take into account any change in noise conditions i.e. increase in noise from the current baseline; and how this change might impact on amenity, or other acoustic and non-acoustic factors that influence the effect of noise.

3.29. In this case the NPPG<sup>2</sup> supports consideration of the likely change due to introduction of a the new source of noise from the outdoor area of the school as well as the absolute/fixed level i.e. a Change Comparison - Relative assessment should be carried out as well.

<sup>2</sup> See paragraph 4.19 above referencing paragraph 006 Reference ID: 30-006-20141224 of the NPPG

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3.30. Furthermore, the NPPG<sup>3</sup> highlights the importance of consideration of the spectral content of the noise i.e. whether or not the noise contains particular high or low frequency content, and the general character of the noise i.e. whether or not the noise contains particular tonal characteristics or other features such as intermittency or substantial variation in level over time, that attract attention or make it stand out from the underlying soundscape. But such considerations are absent from the Appellant's noise assessment.

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<sup>3</sup> See paragraph 4.19 above referencing paragraph 006 Reference ID: 30-006-20141224 of the NPPG

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18TH AUGUST 2020

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## 4. REVIEW OF APPELLANT'S NOISE ASSESSMENT

4.1. There follows a critical review of the Appellant's noise assessment. References to paragraph numbering are to those in the following document:

Abacus Belsize Primary School,  
Planning Noise Assessment,  
Report 19/0084/R1,  
Sunday 15<sup>th</sup> December 2018,  
Cole Jarman Ltd.

### **Assessment of site for school use**

4.2. Paragraph 5.2.4 of the Appellant's noise assessment recognises that traffic noise levels incident on the premises are sufficiently high that the only way of achieving the recommended internal noise levels for a school in a refurbished building from the Department of Education's and Education Funding Agency's guidelines in Building Bulletin 93 Acoustic design of schools: performance standards (BB93), is by keeping windows closed and providing double glazing to all the rooms on the Rosslyn Hill and Downshire Hill facades of the premises.

4.3. Paragraph 5.2.6 of the Appellant's assessment states that "*It will not be possible to use natural ventilation for rooms on these façades*" i.e. opening windows to provide ventilation and control over heating will compromise the internal acoustic conditions in rooms on the Rosslyn Hill and Downshire Hill facades so that acceptable noise levels for teaching and learning and other noise sensitive uses will not be possible.

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4.4. Paragraph 5.2.6 of the Appellant's assessment says that the recommended internal noise levels from BB93 can only be achieved in rooms on the Rosslyn Hill and Downshire Hill facades "*using either a hybrid ventilation system or mechanical ventilation system incorporating suitable noise attenuation measures*". This potentially has substantial impacts in terms of the heritage significance of the building and its listed building status, as the systems could include penetrations through the Rosslyn Hill and Downshire Hill facades, installation of plant externally and running of internal ducting and pipework. Mr Nicholas Baxter, LB Camden's Heritage witness, comments further on how these issues may affect the heritage value of the premises.

#### **Prediction of the Propagation of Noise from the Playground**

- 4.5. Paragraph 6.1.1 confirms that "*The playground located to the rear of the site is overlooked by existing houses and apartments up to five storeys high.*". However, the report does not recognise that immediately adjoining the perimeter of the former Police station are the gardens and outdoor amenity spaces of neighbouring residential properties.
- 4.6. Paragraph 6.12 explicitly recognises that playground noise will be a new noise source affecting the adjacent and nearby residences.
- 4.7. Paragraph 6.1.4 advises that "*Computer modelling has been undertaken to calculate noise levels at neighbouring residences to the application site.*" The report goes on to state that the methodology of ISO 9613 pt 2 has been used to calculate the prediction of the propagation of noise from the play areas. Whilst this is an established means of predicting propagation of noise levels it is worth noting that ISO 9613 has a declared estimated accuracy, in the absence of reflections or barriers, of between +/- 1 to 3 decibels depending on the mean height of the main propagation pathway. If acoustic reflections occur and/or barriers are present (as is the case here, with relatively tall buildings enclosing the proposed

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18TH AUGUST 2020

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playground creating a comparatively reverberant space<sup>4</sup>), then the estimated accuracy is likely to decrease. Consideration of this limitation to the prediction methodology does not feature in the report i.e. the conclusions drawn in regard to the degree of impact are not sensitivity tested taking the estimated accuracy and its variability due to reflections and/or barriers into account. Consequently, it is possible that should the scheme go ahead the noise levels at nearby dwellings from children in the play areas could be higher than predicted in the report.

### **Absolute/Fixed noise levels assessment**

- 4.8. The assessment in the Appellant's noise report relies solely on comparing the predicted levels of noise from the playground area with fixed/absolute benchmarks.
- 4.9. Regarding the impact on adjacent residential outdoor amenity spaces, the Appellant's noise assessment compares the predicted noise levels against the thresholds from Appendix 3 of the Local Plan as described in paragraphs 4.21 to 4.23 above. This is an inappropriate use of the thresholds from Appendix 3 of the Local Plan, as they are intended for use in relation to places of entertainment and for a mixtures of noise types where human voices would not be dominant and typically are applied in town centre type locations where ambient noise levels are likely to be higher than in this case.
- 4.10. Concerning the impact of noise from the playground on nearby residents in their homes the Appellant's assessment admits that the recommended internal noise levels from BS 8223 would be exceeded to a substantial degree when windows are open i.e. for ventilation and

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<sup>4</sup> Reverberation is the reflection of sound from acoustically "hard" surfaces such as concrete, masonry, and glass. Where this occurs in a space with acoustically reflective surfaces in several planes, the sound can bounce backwards and forwards i.e. "echo" and therefore decay less quickly, and reflect over and around barriers reducing their effectiveness.

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18TH AUGUST 2020

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control of overheating; and residents would have to keep their windows closed to achieve the recommendations of this standard.

4.11. Notwithstanding the admission that the noise from the playground recommended internal noise levels from BS 8223 would be exceeded when windows of nearby homes are open; it is important to recognise that this standard qualifies the noise levels it recommends inside dwellings, as follows:

- *"noise levels refer only to the physical characteristics of sound and cannot differentiate between pleasant and unpleasant sounds."* (Introduction).
- The standard *"does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building."* (Scope).
- The standard's guideline internal noise levels in dwellings *"applies to external noise as it affects the internal acoustic environment from sources without a specific character, previously termed "anonymous noise". Occupants are usually more tolerant of noise without a specific character than, for example, that from neighbours which can trigger complex emotional reactions. For simplicity, only noise without character is considered....."* (Paragraph 7.7.1)

4.12. Consequently, given that the noise from the playground will have unpleasant elements i.e. screaming and shouting, will result in a substantial change in noise level (see the next section of this proof) and will have specific character that distinguishes it from the current baseline (see the next section of this proof), it is doubtful that the guidelines of BS 8223 are appropriate to assessment of noise from the playground.

### **Going beyond solely using an Absolute/Fixed noise levels assessment**

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- 4.13. A change comparisons – relative assessment, can be carried out by comparing the “typical” baseline ambient noise level measured at the rear of the former police station of 47 dB LAeq,t from paragraph 4.2.4 of the Appellant’s noise assessment, with the predicted noise levels from the playground.
- 4.14. The Playground Noise Modelling results provided in table 8 of the Appellant’s report show that the predicted noise levels at all the assessment locations representing nearby residential premises are higher than the “typical” baseline noise level of 47 dB LAeq,T, by a margin of about 5 decibels to around 17 decibels depending on the assessment location and whether a noise barrier will intervene or not.
- 4.15. For sounds of similar frequency content and temporal pattern a difference of 5 decibels is readily noticeable, a difference of around 10 decibels is equivalent to a doubling of loudness and 17 decibels between 3 to 4 times louder.
- 4.16. However, in this case the noise from the children playing or taking part in PE in the playground will be very different in frequency content and temporal pattern compared to the existing baseline noise soundscape. Therefore the impact would be greater than if the playground noise had a similar frequency content and temporal pattern as the existing soundscape.
- 4.17. Table 6 of the report shows the assumed source levels and frequency spectrum of noise from children playing, based on measurements at the existing school premises. The table shows that unlike the baseline soundscape shown in table 2 of the Appellant’s report where levels in the lower frequency bands are highest, the measured playground and PE noise is dominated by noise energy in the mid to high frequency bands, where hearing sensitivity is most acute, reflecting the predominantly high pitched nature of children’s voices. This indicates that even if the noise from the playground was not predicted to exceed the typical baseline levels in the area, and instead was to match or even be slightly less than the overall

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A-weighted baseline noise levels in the vicinity of the former police station, the noise from children playing and taking part in PE would be noticeable, intrusive and disruptive at nearby residences due to it being so different in frequency content and temporal variation i.e. nature and character, from the existing baseline soundscape.

- 4.18. However, as noted above the predicted level of noise from children in outdoor areas is moderately to substantially higher than the typical ambient noise level in the vicinity; therefore the impacts of the introduction of the very different frequency spectrum of this noise will be even greater and likely to be noticeable, intrusive and disruptive to the point of causing a material change at receptors in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion i.e. use of gardens for rest and relaxation; having to keep windows closed because of the noise, and disturbance of day time rest and sleep indoors. In my opinion, these responses are likely to occur to the degree that quality of life would be diminished due to change in the acoustic character of the area and would therefore be a Significant Adverse Effect as defined by the Noise exposure hierarchy table from the NPPG (Paragraph: 005 Reference ID: 30-005-20190722).
- 4.19. A context comparison – Relative assessment would involve the comparison of the predicted noise levels from the playground corrected for any features that enhance the impact e.g. tones and impulsive elements or being readily noticeable compared to the existing soundscape; to the underlying background noise level. An example of such an assessment is the methodology from BS 4142, and in this case such an assessment would show a significant adverse impact. However, the scope of BS 4142 specifically excludes assessment of the sound of people.

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## 5. CONCLUSION

- 5.1. National, London Plan and LB Camden Local Plan policies and guidance in relation to noise aim avoid significant adverse effects, minimise adverse effects on health and quality of life, and to not cause harm to amenity.
- 5.2. Noise levels from road traffic on Rosslyn Hill and Downshire Hill are sufficiently high that to comply with the Government's Department for Education and the Education Funding Agency's guidelines for acoustic conditions in schools, double glazing will have to be provided and windows kept closed for all rooms overlooking these roads. Consequently, it will not be possible to provide adequate ventilation and to control overheating by opening windows without compromising the internal acoustic conditions. Possible solutions include acoustically treated penetrations through the Rosslyn Hill and Downshire Hill facades of the premises, installation of ventilation and cooling plant externally, and the running of extensive ducting and pipework internally. These options all have potential to cause substantial adverse visual impacts and negatively affect the heritage status of the premises, as discussed in the evidence of Mr Nicholas Baxter.
- 5.3. The applicant's noise assessment uses criteria that are not appropriate to the main problem of noise from children in the playground as they were designed to control noise with different characteristics from entertainment premises and are applied mainly in town centre areas with higher prevailing ambient noise conditions.
- 5.4. Although the National Planning Practice Guidance (NPPG) advises that the subjective nature of noise means there is not a simple relationship between noise levels and the impact on those affected, the applicant's noise report largely ignores the various factors the NPPG says are important to the assessment of noise and seeks to simply compare the predicted noise

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from the playground to benchmarks that are not appropriate for the assessment of noise from children.

- 5.5. The applicant's assessment doesn't consider the effect of changes in noise due to the proposed scheme. However, the data presented in the applicant's noise report shows that the use of the playground will result in noticeable i.e. intrusive, to major i.e. disruptive, increases in noise at neighbouring residential premises, depending on the spatial relationship to the playground and whether a noise barrier will intervene. When these increases in noise occur, there will be a substantial adverse change in the acoustic character in the neighbourhood of the premises.
- 5.6. In addition, notwithstanding they are inappropriate, the applicant's report shows that the criteria chosen for assessment of the impact of playground noise inside nearby homes will be breached when windows are open for ventilation.
- 5.7. The applicant's noise report shows that the nature and character of the playground noise i.e. variable levels of the mid to high frequency noise of children's voices will be very different compared to the existing soundscape of relatively steady lower frequency dominated road traffic noise. This will mean that the noise from the playground will be more readily noticeable, and therefore intrusive and disruptive compared to the existing soundscape, than by comparison with fixed benchmark sound level criteria or consideration of the increase in noise level alone.
- 5.8. Based on the above it is considered that the applicant's report fails to establish that the proposed scheme will be likely to comply with the requirements of National, London Plan and LB Camden Local Plan policies and guidance in relation to noise, to avoid significant adverse effects, minimise adverse effects on health and quality of life, and not cause harm to amenity.

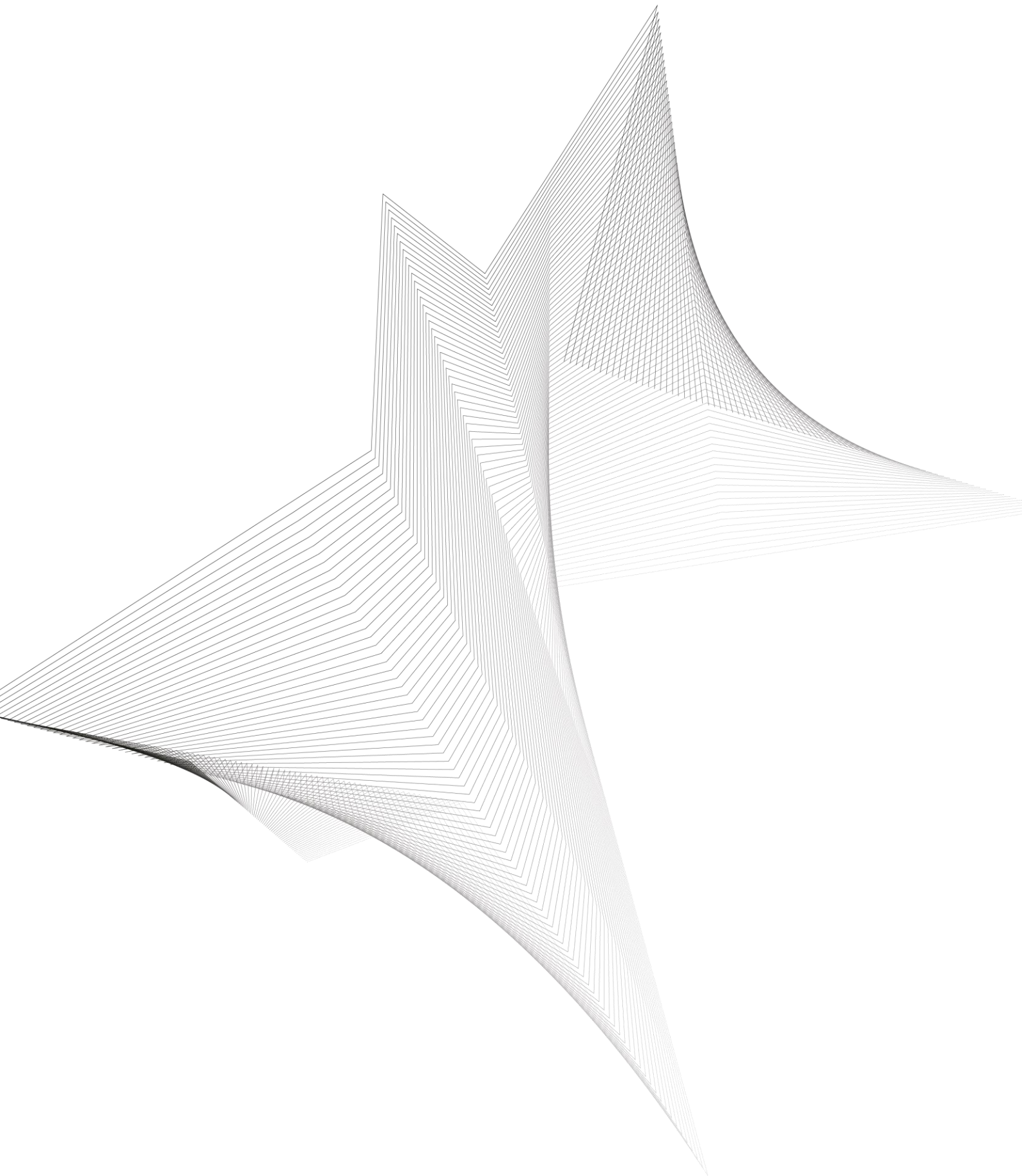
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