

CITY
PLAN
2019 – 2040

**DRAFT NOISE
TECHNICAL
GUIDANCE NOTE**

NOVEMBER 2019

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1 Introduction

1.1 Policy context

This guide provides advice for persons making planning applications in Westminster, acoustic consultants and other professional representatives. It helps with the application of the emerging policies in the council's draft City Plan 2019-2040 by setting out the Noise Thresholds for development and identifying Tranquil Open Spaces.

Draft policy 24 'Local environmental effects' sets out the principles for managing noise in Westminster under clause C:

'C Development should prevent adverse effects of noise and vibration and improve the noise environment in compliance with the council's Noise Thresholds, with particular attention to:

- 1. minimising noise impacts and preventing noise intrusion to residential developments and sensitive uses;**
- 2. minimising noise from plant machinery and internal activities;**
- 3. minimising noise from servicing and deliveries; and**
- 4. protecting the relative tranquillity in and around open spaces.'**

1.2 World Health Organisation (WHO) guidelines

WHO Environmental Noise Guidelines for European Region (WHO, Regional office for Europe, 2018) have now supplemented elements of the WHO Guidelines for Community Noise (1999) upon which Westminster Noise Policy is based. The WHO guideline values most relevant to new development in Westminster are outlined in Table 1.

Table 1: Guideline Values from WHO Guidelines for Community Noise (1999) / BS8233:2014

| Specific environment | Critical health effect(s) | L _{Aeq} [dB] | Time metric [hours] | L _{Amax} Fast [dB] ¹ |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------|---------------------|------------------------------------------|
| Outdoor living area (from noise sources other than road traffic, railways, aircraft or wind turbines) | Serious annoyance, daytime and evening | 55 | 16 | - |
| | Moderate annoyance, daytime and evening | 50 | 16 | - |

¹ Inside bedrooms 45 dB L_{AFmax} to be exceeded no more than 15 times per night-time from sources other than emergency sirens.

| | | | | |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|----|----|----|
| Dwelling, indoors | Speech intelligibility and moderate annoyance, daytime and evening | 35 | 16 | - |
| | Sleep disturbance night time | 30 | 8 | 45 |
| Outside bedrooms (from noise sources other than road traffic, railways, aircraft or wind turbines) | Sleep disturbance, window open (outdoor values) | 45 | 8 | 60 |

1.3 Acoustic Reports

An Acoustic Report is required where development, including changes of use, could affect noise sensitive receptors, or introduce a noise sensitive receptor into an area of existing high ambient noise. The report should set out how any noise and vibration impacts will be mitigated.

Noise sensitive receptors include (as defined in the City Plan) all residential uses; educational establishments; hospitals; hotels; hostels; concert halls; theatres; law courts; broadcasting and recording studios. Tranquil open spaces are also given specific protection from noise and should be considered noise sensitive. Developers should have regard to the times at which noise would cause disturbance to each of these. For residential properties, night time and evening are the most sensitive times. For other noise sensitive properties, day time and evening will be the most sensitive times. Hospital activities will be sensitive to noise at all times. Acoustic Reports need to highlight any noise and vibration generated by a development and how this affects existing external background levels.

Acoustic reports should identify where the nearest noise sensitive property is located, and what noise level from the development will occur outside the nearest noise sensitive window over a 24 hour period as a minimum. The report should demonstrate what measures will be taken to mitigate noise and vibration to meet the council's requirements.

2 Noise Thresholds

This section presents the Noise Thresholds for different types of developments, which are derived from BS8233:2014 and the WHO noise guidelines outlined in Table 1.

2.1 New residential development / conversions

| |
|---------------------------------------------------------------------------------------------------------------------------------|
| Indoors 35 dB $L_{Aeq,16hrs}$ daytime (07.00 to 23.00hrs); |
| Inside bedrooms 30 dB $L_{Aeq,8hrs}$ night-time (23.00 to 07.00hrs); and |
| Inside bedrooms 45 dB L_{AFmax} to be exceeded no more than 15 times per night-time from sources other than emergency sirens. |

2.2 Noise sensitive development in proximity to underground train lines

Noise

Where development is likely to be affected by existing ground-borne noise from underground train operations, for instance resulting from basement excavation, development should not give rise to an increase in ground borne noise within neighbouring properties and the following standards should be met within habitable spaces:

| |
|----------------------------------------------------------|
| Indoors 35 dB L_{ASmax} minimum standard day and night |
|----------------------------------------------------------|

Vibration

The design and structure of the development should protect future occupiers from any vibration arising from underground train operations in any part of a residential property and meet the following standards (as defined by BS 6472 (2008):

| |
|------------------------------------------------------|
| 0.4 VDV $m/s^{-1.75}$ daytime (07:00 - 23:00hrs) |
| 0.2 VDV $m/s^{-1.75}$ night-time (23.00 to 07.00hrs) |

2.3 Noise generating commercial uses including music and entertainment uses (e.g. restaurants, clubs, pubs) and gyms

The design and construction of the separating building structure should be such that any received noise value in the residential habitable spaces meets the criteria in the table 2. The NR values should be used to demonstrate that the received noise would effectively be inaudible.

Where noise generating commercial uses including music and entertainment uses (e.g. restaurants, clubs, pubs) and gyms, (both amplified music and impact noise from gym activities and equipment) are proposed, either as part of new development, conversion or change of use, the below standards shall be used. The values in table 2 should not be exceeded inside any residential dwellings or other noise sensitive properties.

Where existing residential units or other noise sensitive receptors could be affected the design of the development must ensure that there will be no increase of noise above existing levels.

Table 2: Design criteria for residential habitable space.

| Typical use | Noise Criteria | Noise Parameter |
|---------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------|
| Music and entertainment (e.g. restaurants, clubs, pubs) | 10 dB below measured/assessed background in adjoining residential habitable space. | L_{eq} & L_{Fmax} in 63 Hz and 125 Hz octave bands |
| | Fixed criteria ² | NR30 (day), NR25 (night) and NR40 (L_{Fmax}) |
| Gym facilities & other similar uses | 10 dB below measured/assessed background in adjoining residential habitable spaces | L_{eq} & L_{Fmax} in 63 Hz and 125 Hz octave bands |
| | Fixed criteria | NR15 (Day & Night) L_{eq} NR20 L_{Fmax} |

2.4 Minimising noise from plant machinery and internal/external activities

Development including plant or machinery, or contains activities that cause noise from amplified and unamplified music or human voices both internally and externally should achieve the following standards:

Table 3: Noise criteria for plant machinery and internal/external activities

| Existing External Ambient Noise Level | Tonal or Intermittent Noise/ Noise Source | Sound Emission Level that should not be Exceeded at the nearest Noise Sensitive Receptor ³ |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Exceed WHO Guideline levels. L_{Aeq} 55 dB over periods of daytime (07.00-23.00hrs) and L_{Aeq} 45 dB at night-time (23.00-07.00hrs). | Does not contain tones or intermittent noise sufficient to attract attention. | 10 dB below the minimum external background noise level |
| | Contains tones or be intermittent noise sufficient to attract attention. | 15 dB below the minimum external background noise level. |

² These criteria will be applied to development no matter the background/assessed

³ Measured at the nearest noise sensitive receptors 1m from the most affected façade, relative to the existing external background noise level in this location and including assessment at the quietest time during which the plant operates or when there is internal activity at the development site. The background noise level should be expressed in terms of the lowest $L_{A90,15min}$ during day time or night time (depending on the hours of use being applied for).

| | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| | Noise emitted from emergency plant or an emergency life supporting generators. ⁴ | 10 dB above the lowest background noise level within a 24-hour period. |
| Does not exceed WHO Guideline levels. L _{Aeq} 55 dB over periods of daytime (07.00-23.00hrs) and L _{Aeq} 45 dB night-time (23.00-07.00hrs). | Does not contain tones or intermittent noise sufficient to attract attention. | 5 dB below the minimum external background noise level. |
| | Contains tones or be intermittent noise sufficient to attract attention. | 10 dB below the minimum external background noise level. |
| | Noise emitted from emergency plant or an emergency life supporting generators. ⁵ | 10 dB above the lowest background noise level within a 24-hour period. |
| Below 30 dB L _{A90,15min} at the nearest noise sensitive receptors Both daytime (07.00-23.00hrs) and night-time (23.00-07.00hrs). | Noise contains and/or does not contain tones or intermittent noise | Site specific standards that avoid noise disturbance to nearest noise sensitive receptors may be considered. |

3 Tranquil Open Spaces

Despite the serious problems of noise pollution affecting the city, there are relatively quiet areas and positive aspects of Westminster's soundscape (the quality of the acoustic environment). Many of the city's open spaces are relatively tranquil and provide respite from noise pollution and lower noise levels can be experienced at the rear facades of many buildings. Whilst the draft City Plan protects the relative tranquillity in and around all open spaces, a number of spaces are given specific protection because of their tranquillity as identified on Figure 1 and Table 2 below. The council will keep the list of Tranquil Open Spaces under review, and encourages the identification of additional spaces as Tranquil Open Spaces.

⁴ Where emergency plant or a generator is installed testing times will be regulated.

Figure 1 Tranquil Open Spaces in Westminster

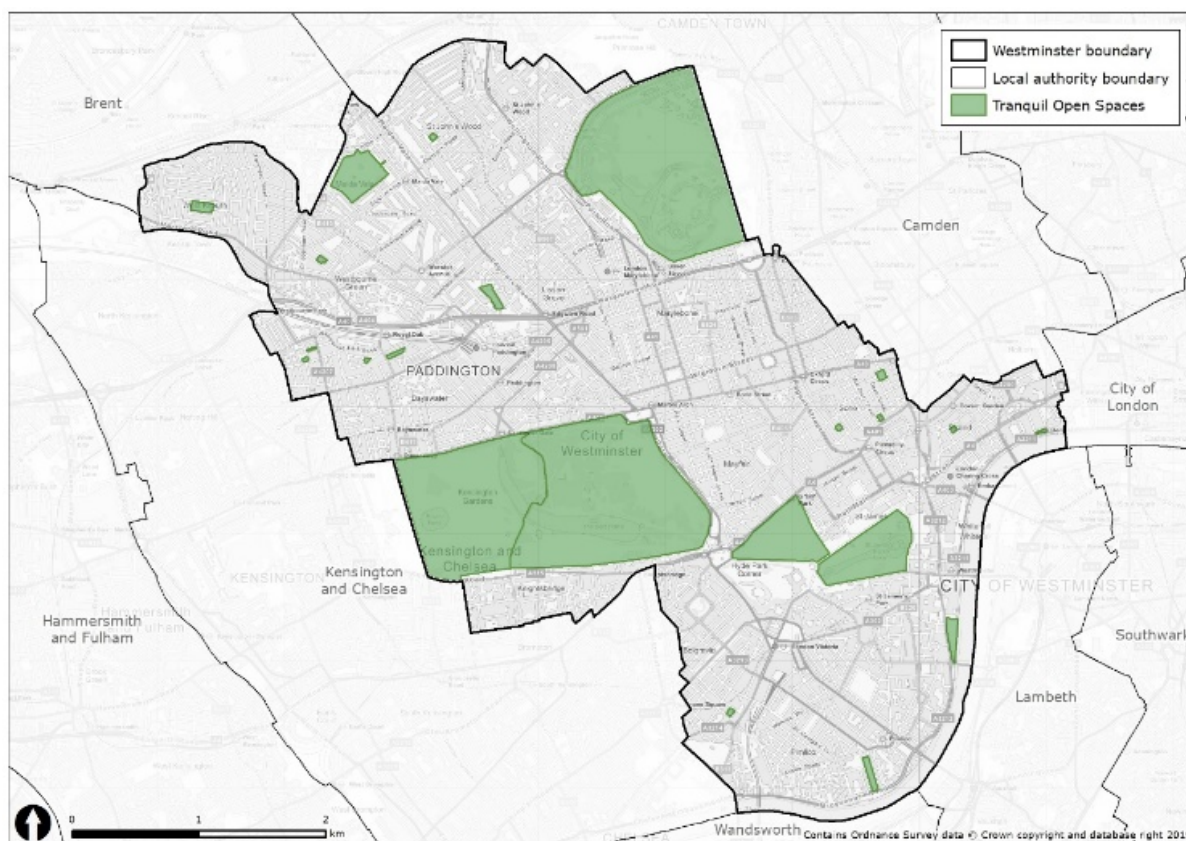


Table 4 Tranquil Open Spaces in Westminster

| | |
|------------------------|----------------------------------|
| 1. Regent's Park | 12. Violet Hill Gardens |
| 2. Green Park | 13. St Anne's Churchyard |
| 3. St James's Park | 14. Shrewsbury Road |
| 4. Kensington Gardens | 15. St Stephen's Gardens |
| 5. Hyde Park | 16. Paddington Recreation Ground |
| 6. Westbourne Gardens | 17. St Mary's Churchyard |
| 7. Porchester Square | 18. Temple Gardens |
| 8. Golden Square | 19. Inigo Jones Gardens |
| 9. Soho Square | 20. Victoria Tower Gardens |
| 10. Ebury Square | 21. Queens Park Gardens |
| 11. St George's Square | 22. Edbrooke Road Gardens |

Tranquil open spaces are given specific protection from noise and should be considered noise sensitive. The noise criteria in sections 2.3 and 2.4 apply to the closest edge of the nearest tranquil open space, or for development within a tranquil open space the criteria apply 5 metres from the noise source at the quietest time of day or night (when the plant operates or when there is internal or external activity at the development). This applies to all open spaces that have been defined as Tranquil Open Spaces and any future update of this list.

It is acknowledged that some developments will enhance the soundscape; in this case, the specified standards above will not need to be met. These developments may include children's play areas, sonic art installations and local amenities.

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References

Useful Links/Information:

A set of standard planning conditions and informatives are available to view below:

<https://www.westminster.gov.uk/standard-conditions-and-informatives>

City Plan 2019-2040

<https://www.westminster.gov.uk/cityplan2040>

<https://www.westminster.gov.uk/westminsters-city-plan-strategic-policies>

Guidelines for community noise, WHO 1999

<https://apps.who.int/iris/handle/10665/66217>

Environmental Noise Guidelines for the European Region (2018)

<http://www.euro.who.int/en/health-topics/environment-and-health/noise/publications/2018/environmental-noise-guidelines-for-the-european-region-2018>

Standards

Standards for noise measurement and mitigation are set out in **BS 8233:2014**, 'Guidance on sound insulation and noise reduction for buildings' and **BS 7445-1:2003** 'Description and measurement of environmental noise. Guide to quantities and procedures'.

For sound insulation in buildings and of building elements;

ISO 717-1:2013 'Acoustics -- Rating of sound insulation in buildings and of building elements -- Part 1: Airborne sound insulation'

Standards for mixed use areas are contained in **BS 4142:2014+A1:2019** 'Methods for rating and assessing industrial and commercial sound'

Standards for building sites are set out in **BS 5228-1:2009+A1:2014**. Code of practice for noise and vibration control on construction and open sites.

BB93: acoustic design of schools - performance standards

<https://www.gov.uk/government/publications/bb93-acoustic-design-of-schools-performance-standards>

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