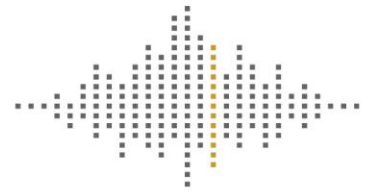


SHARPS REDMORE

ACOUSTIC CONSULTANTS ▪ Established 1990



Report

81-103 Kings Road, Chelsea.

Noise Review of Proposed
Re-Development

Prepared by

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This report has been prepared with all reasonable skill, care and diligence commensurate with an acoustic consultancy practice under the terms and brief agreed with our client at that time. Sharps Redmore provides no duty or responsibility whatsoever to any third party who relies upon its content, recommendations or conclusions.

Executive Summary

Sharps Redmore has been commissioned by Faraday Property Management Ltd to review the noise and vibration issues associated with the proposed redevelopment of 81-103 Kings Road, Chelsea and how this may impact on residents of Charles II Place to the rear of the proposed site.

The review takes the form of a report considering the acoustics statement provided by Ramboll on behalf of Kings Road Property Limited which accompanies the planning application.

The report considers factors including the following:

- a. The nature and character of the estate and the neighbourhood, including the existing baseline noise and vibration conditions.
- b. The overall likely impact of the noise and vibration due to the works and associated traffic.
- c. The daily occurrence of noise and vibration due to the works and associated traffic.
- d. Noise from service yard activities and plant noise
- e. Use of established standards and guidance to consider impact from construction and operational noise.

This report contains a consideration of relevant planning policy and standards, an environmental noise survey carried out in the vicinity of the site and an assessment of the main potential noise sources.

The Ramboll report is incomplete as it has not referenced all key noise generating activities, it assessed the proposal against superseded standards, and relies on background noise levels that are not representative of the surprisingly quiet and tranquil nature of Charles II Place.

Impact of the proposed development on residential properties outlined above.

1.0 Introduction

- 1.1 Sharps Redmore Limited (SR) has been instructed to undertake a review of environmental noise issues and impacts from a proposed redevelopment of 81-103 Kings Road, Chelsea.
- 1.2 The purpose of this assessment is to review the applicant's acoustics statement and to assess noise from site activities such as any mechanical services or plant on site which has the potential to impact off-site, service yard activity such as loading and unloading, construction noise and operational noise from commercial units.
- 1.3 The site is located between Kings Road and Charles II Place, a quiet residential area, immediately to the south. The site is currently a retail and office site.
- 1.4 Section 2 discusses the Government's Planning Policy and relevant guidance and standards relevant to the case.
- 1.5 A long term survey over 72 hours has been undertaken within private gardens to the rear of the proposal to provide existing day and night time levels and has been used to consider the impact of the proposal at the residential properties within the vicinity.
- 1.6 An assessment and review is contained in Section 4. Consideration is given to construction/demolition noise and vibration, and operational noise.

2.0 Assessment Methodology and Criteria

- 2.1 The National Planning Policy Framework (NPPF), amended in July 2021, sets out the Government's economic, environmental and social planning policies for England and "these policies articulate the Government's vision of sustainable development." In relation to noise, paragraph 185 states:

"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:

- a) 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;*
- b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."*

- 2.2 The NPPF reinforces the March 2010 DEFRA publication, "Noise Policy Statement for England" (NPSE), which states three policy aims, as follows:

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- 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 improvement of health and quality of life."

- 2.3 Together, the first two aims require that no significant adverse impact should occur and that, where a noise level which falls between a level which represents the lowest observable adverse effect and a level which represents a significant observed adverse effect, then according to the explanatory notes in the statement:

"... all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life whilst also taking into consideration the guiding principles of sustainable development. This does not mean that such effects cannot occur."

2.4 The WHO guideline values are appropriate to what are termed “critical health effects”. This means that the limits are at the lowest noise level that would result in any psychological, physiological or sociological effect. They are, as defined by NPSE, set at the Lowest Observed Adverse Effect Level (LOAEL), but do not define the level above which effects are significant (the SOAEL). Compliance with the LOAEL should, therefore, be seen as a robust aim.

2.5 The WHO guideline noise values are summarised in the following table:

Table 2.1: WHO guideline noise values

| Document | Level | Guidance |
|---|--------------------|---|
| World Health Organisation “Community Noise 2000” | $L_{AeqT} = 55$ dB | Serious annoyance, daytime and evening. (Continuous noise, outdoor living areas) |
| | $L_{AeqT} = 50$ dB | Moderate annoyance, daytime and evening. (Continuous noise, outdoor living areas). |
| | $L_{AeqT} = 35$ dB | Moderate annoyance, daytime and evening. (Continuous noise, dwellings, indoors) |
| | $L_{AeqT} = 30$ dB | Sleep disturbance, night-time (indoors) |
| | $L_{AMAX} = 60$ dB | Sleep disturbance, windows open at night. (Noise peaks outside bedrooms, external level). |
| | $L_{AMAX} = 45$ dB | Sleep disturbance at night (Noise peaks inside bedrooms, internal level) |

2.6 For L_{AeqT} criteria the time base (T) given in the documents is 16 hours for daytime limits and 8 hours for night time limits.

2.7 British Standard 4142 2019 +A1: Methods for Rating and Assessing Industrial and Commercial Sound (BS 4142:2014) was revised in November 2014, and is the relevant standard to determine impact from sound from industrial and manufacturing processes, sound from fixed installations which comprise mechanical and electrical plant and equipment and sound from the unloading and loading of goods and materials at industrial and/or commercial premises.

2.8 The revised BS 4142:2019 +A1 document was published following extensive consultation with industry and local authorities. Amongst the changes to the Standard, the concepts of certainty in results and the consideration of context of measured values was introduced. In particular, the assessment of impacts reinforces and expands on the concept of context and a commentary is available in Chapter 11 of the Standard, which is reproduced in part below. Further changes include the replacement of ‘likelihood of complaint’ with the ‘likelihood of adverse impact or serious adverse impact’. This is consistent with the approach in the Noise Policy Statement for England (NPSE), also reproduced in part above in 2.2. The character and level of the residual sound compared to the character and level of the specific sound has been considered, together with an assessment of uncertainty of the measured values.

“The significance of sound of an industrial nature depends on both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment cannot be undertaken without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.”

2.9 BS 4142: 2019 +A1 comments further in Chapter 11 (Assessment of impacts) on the derivation of the impact of the specific sound by subtracting the measured background level from the rating level and gives consideration to the following:

- a) Typically, the greater this difference, the greater the magnitude of the impact.
- b) A difference of around +10 dB or more is likely to be an indication of significant adverse impact depending on context.
- c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
- d) The lower the rating level is relative to the measured background level, the less likely it is that the specific sound source will have an adverse or significant adverse impact. Where the rating level does not exceed the background level, this is an indication that the specific sound source will have a low impact, depending on context.

2.10 BS 4142:2019 +A1 comments further with reference to low levels in section 11 in the assessment of impacts and context. It maintains that where background and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true for night time or where daytime levels are also low.

2.11 The national interpretation of the WHO guidelines is contained in BS 8233:2014 'Sound Insulation & Noise Reduction for Buildings'. BS 8233 recommends the following desirable guideline values for internal ambient noise:

Table 4 Indoor ambient noise levels for dwellings

| Activity | Location | 07:00 to 23:00 | 23:00 to 07:00 |
|----------------------------|------------------|------------------------|-----------------------|
| Resting | Living room | 35 dB $L_{Aeq,16hour}$ | — |
| Dining | Dining room/area | 40 dB $L_{Aeq,16hour}$ | — |
| Sleeping (daytime resting) | Bedroom | 35 dB $L_{Aeq,16hour}$ | 30 dB $L_{Aeq,8hour}$ |

2.12 There is no longer a L_{Amax} standard for bedrooms in BS 8233. However, footnote 4 to Table 4 states that “Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$ depending on the character and number of events per night. Sporadic noise events could require separate values.” In this case, it is proposed that the previous BS 8233 internal standard (also referenced in World Health Organisation Guidelines for Community Noise) is applied. This is 45 dB L_{Amax} , inside bedrooms.

Changes in Level

- 2.13 Changes in noise levels of less than 3 dBA are not perceptible under normal conditions and changes of 10 dBA are equivalent to a doubling of loudness. This guidance has been accepted by inspectors, at inquiry, to encompass changes in noise levels in the index L_{AeqT} .
- 2.14 The following table shows the response to changes in noise (known as a Semantic Scale):

Table 2.2: Response to changes in noise

| Change in noise level L_{AeqT} dB | Response | Impact |
|--|----------------------|-------------|
| <3 | Imperceptible | None |
| 3 – 5 | Perceptible | Slight |
| 6 – 10 | Up to a doubling | Significant |
| 11 – 15 | More than a doubling | Substantial |
| >15 | - | Severe |

Ref: Manning “Criteria for the Environmental Assessment, Planning and Mitigation of Railway Noise” Proc. IOA Vol. 20 Part 1 (1998) pp 195 – 202.

- 2.15 Changes in level are useful for considering the potential noise impact arising from changes in road traffic flows.
- 2.16 Considering the above, the following assessment methods are recommended:
- Noise from delivery activity – BS 4142:2019 +A1/WHO Guidelines
 - Noise from mechanical services plant – BS 4142:2019 +A1
 - Noise from van/lorry movements – WHO Guidelines/Change in noise level
 - The sensitivity of the receptors – BS 4142:2019 +A1/WHO Guidelines
- 2.17 The London Plan 2021 Policy D14 Noise, provides the following in italics:

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) The management of*

noise is about encouraging the right acoustic environment, both internal and external, in the right place at the right time. This is important to promote good health and a good quality of life within the wider context of achieving sustainable development. The management of noise should be an integral part of development proposals and considered as early as possible. Managing noise includes improving and enhancing the acoustic environment and promoting appropriate soundscapes. This can mean allowing some places or certain times to become noisier within reason, whilst others become quieter. Consideration of existing noise sensitivity within an area is important to minimise potential conflicts of uses or activities, for example in relation to internationally important nature conservation sites which contain noise sensitive wildlife species, or parks and green spaces affected by traffic noise and pollution.

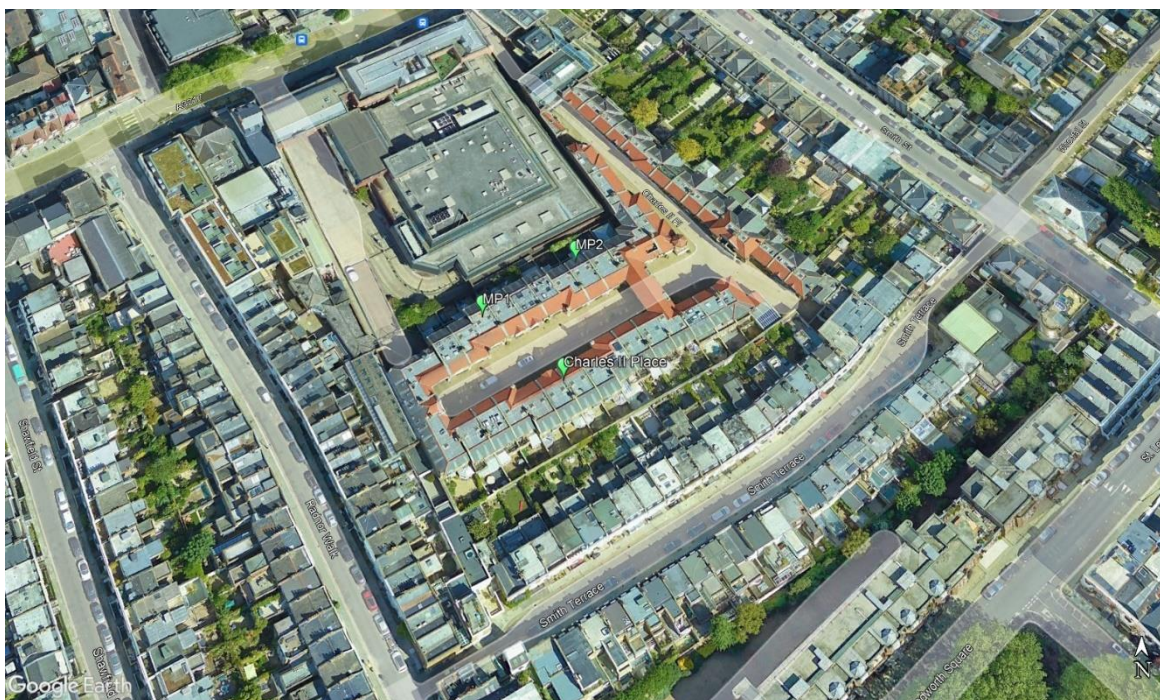
Boroughs, developers, businesses and other stakeholders should work collaboratively to identify the existing noise climate and other noise issues to ensure effective management and mitigation measures are achieved in new development proposals.

The Agent of Change Principle places the responsibility for mitigating impacts from existing noise-generating activities or uses on the new development. Through the application of this principle existing land uses should not be unduly affected by the introduction of new noise-sensitive uses or noise-generating uses to avoid prejudicing their potential for intensification or expansion.

3.0 Survey Methodology, Details and Results

- 3.1 A survey was undertaken over the 11th -13th October 2021 in the rear gardens of 39 and 43 Charles II Place. The locations of the surveys are shown below and considered representative of the residential properties in the area. This has provided data to inform the existing ambient, maximum and background levels. A further short-term validation survey was undertaken on the 30th March 2023 with no significant variation noted.
- 3.2 The survey was undertaken at points below. The existing noise climate on the estate is noticeably much quieter and less busy than on the nearby Kings Road. The estate is effectively screened from the Kings Road by a row of buildings taller than the houses that make up the estate, which acts as a substantial barrier to road traffic noise.
- 3.3 The noise climate consists of quiet distant road traffic interspersed with occasional sound of aircraft flying to or from Heathrow. There is little or no traffic associated with the estate.
- 3.4 The overall soundscape on the estate is quiet for a central urban location with just low levels of traffic and pedestrian activity.

Figure 3.1 Monitoring positions for survey:



- 3.5 The instrumentation used to carry out the long term noise survey was as follows.
- Norsonic type 1 precision sound level meters (SLM)
 - Norsonic 1250 acoustic calibrators

- 3.6 The SLM was set to measure the following “A” weighted parameters: L_{Aeq} , L_{A90} and L_{Amax} . The measurement sample period was 5 minutes. Immediately before and after the measurements were carried out, the SLMs were calibrated using the acoustic calibrator with no noticeable drift.
- 3.7 The weather during the survey was dry with a gentle breeze suitable for noise measurements.
- 3.8 The noise survey established the measured noise levels at the measurement locations graphical summaries are provided below. Full survey data is available if required.

Table 3.1: Noise Level Summary 39 Charles II Place:

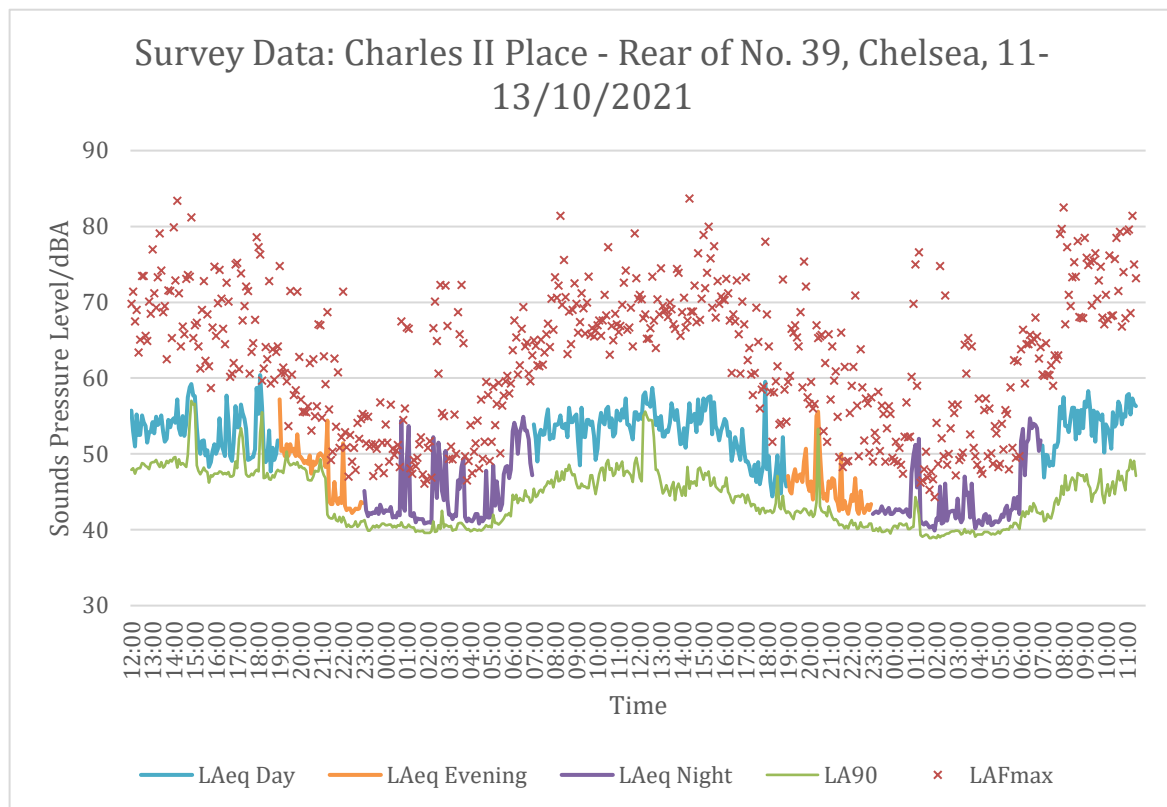
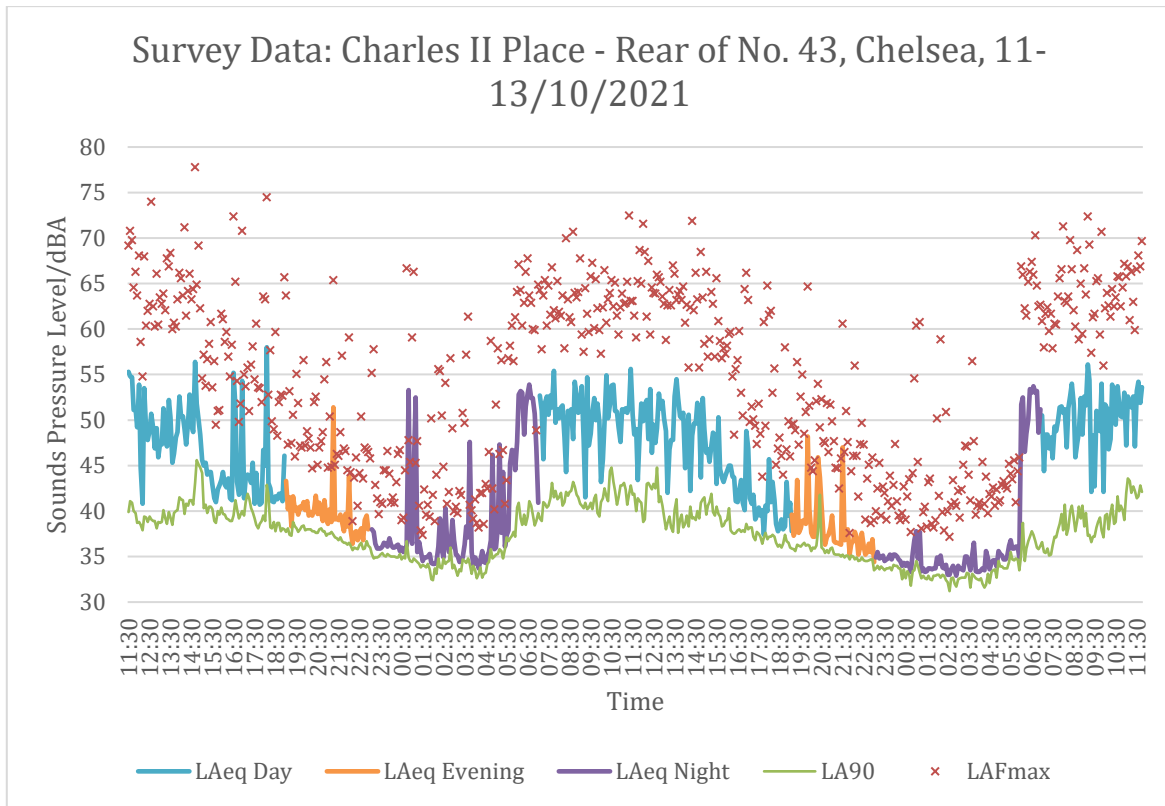


Table 3.2: Noise Level Summary 43 Charles II Place:



4.0 Assessment and Review.

Acoustics Statement: Ramboll January 2023.

- 4.1 This is essentially restricted to plant noise from the proposal and the application of BS4142:1997. This standard has been superseded by BS4142:2014 +A1 2019 which is acknowledged in the report. The logic for using the older version is that it is referenced in the RBKC Local Plan 2019. It is suggested that this is a historical oversight and that RBKC would reasonably require an assessment undertaken using current guidance and standards.
- 4.2 The current British Standard 4142 2019 +A1: Methods for Rating and Assessing Industrial and Commercial Sound (BS 4142:2014) was revised in November 2014, and is the relevant standard to determine impact from sound from industrial and manufacturing processes, sound from fixed installations which comprise mechanical and electrical plant and equipment and sound from the unloading and loading of goods and materials at industrial and/or commercial premises. No reference to these service yard activities is found within the acoustic statement as the earlier standard has been applied.
- 4.3 Further changes include the replacement of 'likelihood of complaint' with the 'likelihood of adverse impact or serious adverse impact'. This is consistent with the approach in the Noise Policy Statement for England (NPSE). The character and level of the residual sound is compared to the character and level of the specific sound is considered, together with an assessment of uncertainty of the measured values. Given the application of BS4142:1997, there is no assessment of loading of goods or service yard activities such as arrivals and departures of goods vehicles.
- 4.4 The survey undertaken at LT1 referenced within the acoustic statement does not adequately represent the noise climate at the rear gardens of dwellings on Charles II Place. The long-term survey undertaken by SR within the rear gardens of numbers 39 and 43 over a 72-hour period in 2021 as detailed above, shows background levels significantly lower than those measured and used in the supporting noise document produced by Rambolls. Subjectively, Charles II Place is surprisingly quiet for this part of London. It is effectively screened on all sides from road traffic noise and it is aircraft that is the most noticeable noise source. There is a sense of tranquillity within the estate given its location and the benefit obtained by substantial screening from local road traffic.
- 4.5 There is an arched access to Charles II Place off Kings Road. The survey undertaken by the applicants at LT1 would be influenced by road traffic noise along Kings Road, providing higher ambient and background noise levels. The rear gardens of the properties on Charles II Place do not have line of sight to the Kings Road. Consequently, ambient and background levels are lower than those provided.
- 4.6 This discrepancy is significant when suggesting criteria for plant and service yard activities as, amongst other factors, criteria is assessed against typical background levels for the relevant time period. This means that noise impact from plant/deliveries would be greater than predicted in the supporting assessment, as activities/operations are compared to existing background levels. This is due mainly to the fact that the supporting document survey was undertaken towards Kings Road, by the M&S plant room rather than in the rear gardens of noise sensitive receptors.

- 4.7 As an example, the applicants report considers lowest background levels at the receptors to be 44 dB L_{A90} during the daytime and 43 dB L_{A90} during the night and compares plant noise against these figures. No comparison is provided for service yard activity and goods vehicle movements.
- 4.8 Surveys undertaken by SR within the gardens of no.s 39 and 43 gave backgrounds L_{A90} of low 30dB's during the night and low to mid 40's during the day. BS 4142:2014 suggests that in terms of a rating level against background .." *a difference of around +10dB or more is likely to be an indication of significant adverse impact, depending on the context*" (Para 11 Assessment of Impacts BS4142:2014)
- 4.9 Maximum levels from lorry movements, such a doors slamming, trolley movements, tailgates, brakes etc are not discussed in the applicants report. It is often this maximum parameter (L_{Amax}) that is most relevant in terms of sleep disturbance at night and relevant to the WHO guidelines.
- 4.10 In terms of construction/demolition noise; there is little reference within the application. There is reference to a construction noise limit within the DTMP based on RBKC guidance of 70 dB $L_{Aeq 10 \text{ hour}}$. Given the advice contained within BS5228:2014 and the "ABC method" for noise limits this would be more appropriate as Category A given the existing low ambient noise levels at the Estate. This would be 65 dB $L_{Aeq 10 \text{ hour}}$. It is understood that this was accepted as the relevant noise level by the architect in pre-application discussions.
- 4.11 Reference is made to a S.61 application (Control of Pollution Act 1974) within the CMP. There is no consideration of impact of vibration from demolition/construction. Given the proximity and absence of any existing vibration sources at Charles II Place this could be considerable and further information is required in this regard.
- 4.12 The demolition/construction phase will give noise levels significantly in excess of existing ambient levels. There is currently no vibration source within Charles II Place. Perceptible vibration over the likely extent of these works is likely, increasing associated disruption of the use of the properties combined with airborne and potentially ground/structure borne noise.
- 4.13 in terms of operational noise, airborne noise levels from plant and service activity including loading and unloading has potential to be disruptive and substantially more than the existing background levels at Charles II Place, particularly at night.
- 4.14 Similarly the use of the terraces/courtyards has that potential, together with the introduction of a new type of noise source. Mitigation proposals have not been provided for these noise sources.
- 4.15 It is understood that a similar scheme in Kensington has landscaped planters as a form of mitigation. These will provide no physical mitigation although may provide some subjective reduction if the noise source cannot be seen. Any screening needs to be impervious and complete to provide a barrier effect.

APPENDIX A

ACOUSTIC TERMINOLOGY

Acoustic Terminology

1. Noise, defined as unwanted sound, is measured in units of decibels, dB. The range of audible sound is from 0 dB to 140 dB. Two equal sources of sound, if added together will result in an increase in level of 3 dB, i.e. $50 \text{ dB} + 50 \text{ dB} = 53 \text{ dB}$. A 10 dB increase in sound is perceived as a doubling of loudness.
2. Frequency (or pitch) of sound is measured in units of Hertz. 1 Hertz = 1 cycle/second. The range of frequencies audible to the human ear is around 20 Hz to 18000 Hz (or 18 kHz). The capability of a person to hear higher frequencies will reduce with age. The ear is more sensitive to medium frequency than high or low frequencies.
3. To take account of the varying sensitivity of people to different frequencies a weighting scale has been universally adopted called "A-weighting". The measuring equipment has the ability to automatically weight (or filter) a sound to this A scale so that the sound level it measures best correlates to the subjective response of a person. The unit of measurement thus becomes dBA (decibel, A-weighted).
4. The second important characteristic of sound is amplitude or level. Two units are used to express level a) sound power level - L_w , and b) sound pressure level - L_p . Sound power level is an inherent property of a source whilst sound pressure level is dependent on surroundings/distance/directivity etc. The sound level that is measured on a meter is the sound pressure level, L_p .
5. External sound levels are rarely steady but rise or fall in response to the activity in the area - cars, voices, planes, birdsong, etc. A person's subjective response to difference noises has been found to vary dependent on its temporal distribution (i.e. its variation with time). For this reason, a set of statistical indices have been developed.
6. There are four main statistical indices in use in the UK:
 - L_{A90} The sound level (in dBA) exceeded for 90% of the time. This unit gives an indication of the sound level during the quieter periods of time in any given sample. It is used to describe the "background noise level" of an area.
 - L_{AeqT} The equivalent continuous sound level over a period of time, T. this unit may be described as "the notional steady noise level that would provide, over a period, the same energy as the varying noise in question" (In other words, the energy average level). This unit is now used to measure a wide variety of different types of noise of an industrial or commercial nature, as well as road traffic, aircraft and trains.
 - L_{A10} The sound level (in dBA) exceeded for 10% of the time. This level gives an indication of the sound level during the noisier periods of time in any given sample. It has been used over many years to measure and assess road traffic noise.
 - L_{AMAX} The maximum level of sound, i.e. the peak level of sound measured in any given period. This unit is used to measure and assess transient noises, i.e. gun shots, individual vehicles, etc.