

NOISE IMPACT STATEMENT

**North Harrow Community Centre
Station Road, North Harrow**

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Report prepared for:

B W Foundation Limited

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1.0 INTRODUCTION

- 1 This Noise Impact Statement accompanies a full planning application for the development of the “North Harrow Community Centre” (NHCC). The proposed development includes a Sports Centre, Gymnasia, Beauty Salon, Prayer Area, Library, Exhibition Spaces, Seminar Rooms, ancillary Café/Restaurant and Children’s Play Centre.

- 2 The Equus Partnership Ltd has been commissioned by B W Foundation Limited to consider the noise impact of the proposed development. This report reviews:
 - i) The historical context of the application.

 - ii) The existing noise environment at the site;

 - iii) The typical noise levels generated by the proposed use;

 - iv) The impact of the proposed use in relation to National, Regional and Local Planning Policy and other relevant design guidance; and

 - v) How planning conditions can be used to control the impact of the proposed development.

2.0 HISTORICAL CONTEXT

- 3 An earlier planning application for a Community Centre on this site was considered by the Local Planning Authority in 2009. The scheme was considerably larger in scale than the currently proposed development.

- 4 Planning Permission for the development was refused. The first two grounds for refusal were that the development presented “*an unsafe development in an area with a high probability of flooding and is likely to result in flood risk elsewhere*” and that the “*by reason of excessive bulk, massing and footprint would appear unduly bulky, obtrusive, overbearing and over dominant*”. The third reason for refusal was that:

“The proposed development, by reason of excessive site coverage by building, hard surfaced areas and increase in on-street parking with associated disturbance and general activity, lack of green space and loss of trees, would be an over-intensive use, and amount to overdevelopment of the site to detriment of neighbouring residential amenity....”

In this respect, the development is stated to be contrary to policy EP25 of the Harrow Unitary Development Plan. This policy states that the Council will take into account noise and vibration levels likely to result from or affect a proposal and will require noise, vibration and disturbance to be minimised. It further states that where development proposals would lead to unacceptable levels of noise, vibration or disturbance, planning permission will be refused.

5 The Officer's Report presented to Members at Committee highlights the following noise related concerns:

i) Representations objecting to the development suggested that there would be an *"increase in noise disturbance to local residents as a result of the increase in capacity and facilities"*.

ii) The "Appraisal" section of the report states:

"Noise and related disturbance from the intensified use of the site is considered to be an issue with the proposed development. Explanatory paragraph 3.87 of policy EP25 states: "So that people and sensitive environments are not subjected to excessive noise levels from new developments or changes of use, noise generating development will not be permitted in noise-sensitive areas, unless developers can demonstrate that it would not have an adverse impact on neighbouring land uses...Developers will be expected to ensure that noise arising from their proposals, including noise generated by people or vehicles arriving and leaving the premises does not cause excessive disturbance."

iii) The "Appraisal" continues:

"The applicant has not demonstrated through the submission of a noise report that the intensification of the use of the site through the redevelopment would not have an adverse impact on noise levels in the vicinity. It is considered that the increase in building capacity, parking and range of uses proposed that there would be likely to have a noticeable impact in terms of disturbance and associated activity in the surrounding area".

6 The scheme for which planning permission is now sought is significantly less extensive than the original scheme. In particular, the footprint, scale and massing of building has been reduced; the development is divided into two separate building; the development will not provide any residential use; the extent of car parking is reduced and the majority of proposed parking spaces will occupy the position of existing car parking at the site.

- 7 The revised scheme has resulted from pre-application meetings with the Local Planning Authority and extensive public consultation including public exhibitions.
- 8 This “Noise Impact Statement” presents a comprehensive assessment of the potential noise impact of the current development proposal.

3.0 SITE DESCRIPTION

- 9 The development site comprises land currently occupied by the North Harrow Assembly Hall, land occupied by 34-36 Canterbury Road and land occupied by 37-39 Gloucester Road. The North Harrow Assembly Hall principally comprises three single storey buildings understood to have community use since their construction during the Second World War. The buildings are currently owned by the Battlers Well Foundation and used for a variety of community purposes. Nos. 34 to 36 Canterbury Road comprise a pair of semi-detached dwellings with an attached single storey residential annex (36A). Nos. 37 and 39 Gloucester Road also comprise a pair of semi-detached properties. No. 37 is currently used as a dwelling, whilst no. 39 operates is used as a Nursery School. The development proposals include the demolition of all of these properties.
- 10 To the north, the site is bounded by Canterbury Road which is characterised by a predominance of semi-detached dwelling houses.
- 11 The eastern boundary of the site is formed with the side boundary to no. 38 Canterbury Road. The boundary then projects in a south westerly direction adjoining the rear gardens of nos. 45 to 55 Cumberland Road and then the side boundary of 55 Cumberland Road.
- 12 The southern boundary of the site is formed with Gloucester Road which is predominantly residential, although directly opposite the site (at 42-44 Gloucester Road) is a nursery school.
- 13 The western boundary of the site is formed with Station Road. The southern section of this road is occupied by a 3-6 storey mixed use development (Utopia Court and Savoy Court) which includes residential units, a community area and a currently vacant commercial unit. The northern section of the road is occupied by a petrol filling station, petrol filling station/garage workshop with residential use beyond.
- 14 The general location of the site and its environs are shown on **Figure 1** attached at **Appendix A**.

4.0 DEVELOPMENT PROPOSALS

- 15 The proposed development comprises two principal buildings. A larger building is proposed at the northern end of the site. This building is to house:
- i) At **Basement Level -2**, a sports hall (providing a five-a-side football pitch, or sub-divisible to provide four badminton courts), male gymnasium and male changing facilities.
 - ii) At **Basement Level -1**, a female gymnasium, female changing facilities, beauty salon, seminar room, kitchen and ancillary areas.
 - iii) At **Ground Level**, a prayer area, exhibition space, dining facility and ancillary areas.
 - iv) At **1st Floor Level**, a library, exhibition hall, seminar room(s), external terrace and ancillary areas.
 - v) At **2nd Floor Level**, management offices, board room and IT/Security office.
- 16 The smaller building at the southern end of the site is to comprise:
- i) At **Ground Floor Level**, a children's play lounge, two storey climbing frame.
 - ii) At **1st Floor Level**, a servery (and void for the two storey climbing frame).
 - iii) At **2nd Floor Level**, three children's party rooms.
- 17 The northern building is to be accessed from Station Road off an extensive new piazza. To the rear of the building is a "Garden of Contemplation", access to which may only be gained through the main building.
- 18 The southern building is to be accessed from the junction of Station Road/Gloucester Road. To the rear of the children's block is a "Garden of Discovery", access to which may only be gained through the children's block.
- 19 The area between the two buildings is to provide parking for up to 29 cars. The location of this parking area is very broadly aligned with parking facilities at the existing North Harrow Assembly Hall. Eleven of the parking spaces will be below the first floor projection of the main building (i.e.

under cover). Two additional (staff) car parking spaces are provided at the north east corner of the development.

20 The main vehicular access point to the development is very broadly aligned with the vehicular access point of the existing North Harrow Assembly Hall.

21 From an acoustic perspective, the proposed development is both “noise sensitive” and one that has the capability of generating some degree of noise. In light of the above, the following sections of this report present:

- a) A review of noise intrusion into the development (for example, from road traffic) to ensure that internal noise levels are compatible with the proposed usage.
- b) A review of noise levels that may be generated by the operational use of the development and the impact of such noise on neighbouring noise sensitive properties.
- c) A review of noise that may be generated by additional car parking and pedestrian activity that will be generated by the development.
- d) A review of noise that may be generated by proposed mechanical services installations.

22 However, before presenting such analysis, it is important to consider relevant planning policy and assessment guidance against which noise considerations can be appropriately assessed.

5.0 PLANNING POLICY CONTEXT AND ASSESSMENT GUIDANCE

23 In order to consider the significance of the existing noise environment at the site, reference can be made to the following standards and guidance documents:

(5).□.□.□.□.□.□.□□□□ NATIONAL POLICY

Planning and Policy Guidance Note 24 (PPG 24)

24 This note gives guidance to local authorities on the use of their planning powers to minimise the adverse impacts of noise. It outlines the considerations to be taken into account in determining planning applications both for noise-sensitive developments and for those activities which will generate noise.

25 The advice for “noise sensitive” development in PPG 24 states:

“Developments such as offices, hospitals and schools will contain buildings and activities which are noise-sensitive. But these developments are likely to occupy sizeable sites and to contain a proportion of buildings and activities which are less noise-sensitive. The NEC principle¹ cannot therefore be sensibly applied to such developments and it will be more appropriate to refer to specific guidance on internal noise standards in respect of each activity. General information can be found in BS 8233 1987. Information about guidance for health and hospital buildings is available from NHS Estates, an Executive Agency of the Department of Health, 1 Trevelyan Square, Boar Lane, Leeds LS1 6AE. The Department for Education publishes guidance for schools (see Annex 8).

26 With regard to “noisy developments”, paragraph 10 of PPG 24 states:

“Much of the development which is necessary for the creation of jobs and the construction and improvement of essential infrastructure will generate noise. The planning system should not place unjustifiable obstacles in the way of such development. Nevertheless, local planning authorities must ensure that development does not cause an unacceptable degree of disturbance. They should also bear in mind that a subsequent intensification or change of use may result in greater intrusion and they may wish to consider the use of appropriate conditions.”

27 PPG 24 also provides detailed guidance for assessing the potential noise impacts of other land uses. Whilst the guidance given in respect of “industrial” is not relevant for assessing general operational noise from a community centre, the guidance is appropriate for considering the potential noise impact of fixed plant installations (such as air conditioning units, extract fans, etc.), that may be associated with such use. Paragraph 19 of Annex 3 states:

“The likelihood of complaints about noise from industrial development can be assessed, where the Standard is appropriate, using guidance in BS 4142: 1990. Tonal or impulsive characteristics of the noise are likely to increase the scope for complaints and this is taken into account by the “rating level” defined in BS 4142. This “rating level” should be used when stipulating the level of noise that can be permitted. The likelihood of complaints is indicated by the difference between the noise from the new development (expressed in

¹ PPG 24 introduces the principle of using “Noise Exposure Categories” (NEC) for determining the suitability of a site from residential development .

terms of the rating level) and the existing background noise. The Standard states that: “A difference of around 10 dB or higher indicates that complaints are likely. A difference of around 5 dB is of marginal significance.” Since background noise levels vary throughout a 24 hour period it will usually be necessary to assess the acceptability of noise levels for separate periods (e.g. day and night) chosen to suit the hours of operation of the proposed development. Similar considerations apply to developments that will emit significant noise at the weekend as well as during the week. In addition, general guidance on acceptable noise levels within buildings can be found in BS 8233: 1987, and guidance on the control of noise from surface mineral workings can be found in MPG 11.”

- 28 As highlighted in paragraph 24 above, even where development is considered to be “noisy”, PPG 24 states that the planning system should not place “*unjustifiable obstacles in the way of such development*”. In this respect, PPG 24 highlights the controls that can be introduced within a development to minimise the potential noise impact of a development. Paragraph 13 states:

“A number of measures can be introduced to control the source of, or limit exposure to, noise. Such measures should be proportionate and reasonable and may include one or more of the following:

*(i) **engineering:** reduction of noise at point of generation (eg by using quiet machines and/or quiet methods of working); containment of noise generated (eg by insulating buildings which house machinery and/or providing purpose-built barriers around the site); and protection of surrounding noise-sensitive buildings (eg by improving sound insulation in these buildings and/or screening them by purpose built barriers);*

*(ii) **lay-out:** adequate distance between source and noise-sensitive building or area; screening by natural barriers, other buildings, or non-critical rooms in a building;*

*(iii) **administrative:** limiting operating time of source; restricting activities allowed on the site; specifying an acceptable noise limit.”*

Paragraph 14 of PPG 24 states:

“Early consultation with the applicant about the possible use of such measures is desirable and may enable them to be incorporated into the design of the proposal before it is formally submitted for determination. Alternatively it may be appropriate for a local planning authority to ensure that such measures are introduced by imposing conditions.”

29 Annex 4 of PPG 24 provides advice on the use of Planning Conditions to control noise impacts.

5.2 REGIONAL POLICY

The London Plan – 2008

30 The Mayor of London's "London Plan" (*Spatial Development Strategy for Greater London – Consolidated with Alterations since 2004*) includes policies to make London a more attractive, well-designed and green city. With regard to noise, the plan includes the following relevant policies:

Policy 4A.3 Sustainable design and construction

The Mayor will, and boroughs should, ensure future developments meet the highest standards of sustainable design and construction and reflect this principle in DPD policies.

These will include measures to:

.....

- *reduce adverse noise impacts.*

.....

Policy 4A.20 Reducing noise and enhancing soundscapes

31 *The Mayor will and boroughs in DPDs should reduce noise by:*

- *minimizing the existing and potential adverse impacts of noise on, from, within, or in the vicinity of, development proposals*

.....

The Mayor will work with strategic partners to ensure that the transport, spatial and design policies of this plan support the objectives, policies and proposals set out in the London Ambient Noise Strategy.

5.3 LOCAL POLICY

"The Harrow Unitary Development Plan" (adopted July 2004)

32 Local planning policy is set out in the "*The Harrow Unitary Development Plan*" (HUDP). The principal "saved" policy relevant to noise within the HUDP is set out below:

"POLICY EP 25

In assessing planning applications the council will take into account noise and vibration levels likely to result from or affect a proposal and will require noise, vibration and disturbance to be minimised through:-

- (A) *design, layout & orientation of buildings;*
- (B) *planting and landscaping;*
- (C) *use of noise screens;*
- (D) *insulation;*
- (E) *enclosing or screening plant and equipment;*
- (F) *controlling times of operation;*
- (G) *vibration suppression; and*
- (H) *other appropriate measures.*

Development proposals that would lead to unacceptable levels of noise, vibration or disturbance will be refused."

5.4 OTHER RELEVANT GUIDANCE

BS 4142: 1997

"Method For Rating Industrial Noise Affecting Mixed Residential and Industrial Areas"

- 33 *BS 4142: 1997: "Method For Rating Industrial Noise Affecting Mixed Residential and Industrial Areas" is referred to in PPG 24 was revised in 1997. The Standard presents detailed guidance for assessing the likelihood of complaints from noise. The foreword to the Standard qualifies that the assessment procedure is intended for noises "of an industrial nature".*
- 34 The assessment procedure outlined in BS 4142 essentially involves comparing the "Rating Level" of a noise source and the "Background Noise Level" when the source is not present.
- 35 The "Rating Level" (L_{Ar}) referred to is the specific noise level of the noise source under investigation (in terms of the L_{Aeq} noise index), to which corrections are applied if the noise has certain audible characteristics. If the noise has a distinct tone (whistle, whine, hiss, screech, etc.), distinct impulses (bang, click, clatter, thump, etc.) or irregular enough in character to attract attention, a correction of +5dB is added to the specific noise level.

36 The “Background Noise Level” (L_{A90}) represents the noise level that is exceeded for 90% of the stated measurement period. For assessment purposes, the background noise level needs to be determined without the noise source under investigation operating.

37 The time of operation needs to be taken into account. During the day (normally taken to be 07.00 to 23.00 hours) a one hour measurement period is considered appropriate. During the night (normally taken to be 23.00 – 07.00 hours) a 5 minute time period is normally used.

38 The assessment method of BS 4142 states that:

“Assess the likelihood of complaints by subtracting the measured background noise level from the rating level.

NOTE. More than one assessment may be appropriate.

The greater this difference the greater the likelihood of complaints.

A difference of around +10dB or more indicates that complaints are likely.

A difference of around +5dB is of marginal significance.

If the rating level is more than 10dB below the measured background noise level then this is a positive indication that complaints are unlikely.”

BS 8233: 1999

Sound Insulation and Noise Reduction For Buildings – Code of Practice

39 BS 8233: 1999: “*Sound Insulation and Noise Reduction For Buildings – Code of Practice*” replaces BS 8233: 1987 referred to in PPG24. The revised standard provides guidance on “*acceptable*” internal noise levels for various types of building. These are presented in Table 5 of the Standard. The following guidance is presented for various room uses:

Table 5 — Indoor ambient noise levels in spaces when they are unoccupied

Criterion	Typical situations	Design range $L_{Aeq,T}$ dB	
		Good	Reasonable
Reasonable industrial working conditions	Heavy engineering	70	80
	Light engineering	65	75
	Garages, warehouses	65	75
Reasonable speech or telephone communications	Department store	50	55
	Cafeteria, canteen, kitchen	50	55
	Wash-room, toilet	45	55
	Corridor	45	55
Reasonable conditions for study and work requiring concentration	Library, cellular office, museum	40	50
	Staff room	35	45
	Meeting room, executive office	35	40
Reasonable listening conditions	Classroom	35	40
	Church, lecture theatre, cinema	30	35
	Concert hall, theatre	25	30
	Recording studio	20	25
Reasonable resting/sleeping conditions	Living rooms	30	40
	Bedrooms ^a	30	35

^a For a reasonable standard in bedrooms at night, individual noise events (measured with F time-weighting) should not normally exceed 45 dB L_{Amax} .

40 In addition to recommending sound levels for internal areas, guidance values are also presented for outdoor amenity spaces. BS 8233: 1999 states:

“In gardens and balconies, etc., it is desirable that the steady noise level does not exceed 50dB $L_{Aeq,T}$ dB and 55dB $L_{Aeq,T}$ should be regarded as the upper limit”.

Guidelines For Community Noise – 1999 (World Health Organisation)

41 This document provide a comprehensive summary of research regarding the effects of noise on the community. The introduction of the Guidelines state:

“Community noise (also called environmental noise, residential noise or domestic noise) is defined as noise emitted from all sources, except noise at the industrial workplace. Main sources of community noise include road, rail and air traffic, industries, construction and public work, and the neighbourhood. Typical neighbourhood noise comes from premises and installations related to the catering trade (restaurant, cafeterias, discotheques, etc.); from live or recorded music; from sporting events including motor sports; from playgrounds and car parks; and from domestic animals such as barking dogs. The main indoor sources are ventilation systems, office machines, home appliances and neighbours.

- 42 Section 2 of the Guidelines presents a general discussion regarding the types of noise affecting communities and their measurement. The guidelines promote the use of the $L_{Aeq,T}$ noise index. However, where there are distinct events to the noise, such as with aircraft or railway noise, the guidelines recommend that measures of the individual events should be obtained (using, for example, L_{Amax} or L_{AE}), in addition to $L_{Aeq,T}$ measurements.
- 43 Relevant guidance values are presented in Table 4.1, reproduced below:

Table 4.1: Guideline values for community noise in specific environments.

Specific environment	Critical health effect(s)	LAeq [dB]	Time base [hours]	LAmx, fast [dB]
Outdoor living area	Serious annoyance, daytime and evening Moderate annoyance, daytime and evening	55 50	16 16	- -
Dwelling, indoors	Speech intelligibility and moderate annoyance, daytime and evening	35	16	
Inside bedrooms	Sleep disturbance, night-time	30	8	45
Outside bedrooms	Sleep disturbance, window open (outdoor values)	45	8	60
School class rooms and pre-schools, indoors	Speech intelligibility, disturbance of information extraction, message communication	35	during class	-
Pre-school Bedrooms, indoors	Sleep disturbance	30	sleeping -time	45
School, playground outdoor	Annoyance (external source)	55	during play	-
Hospital, ward rooms, indoors	Sleep disturbance, night-time Sleep disturbance, daytime and evenings	30 30	8 16	40 -
Hospitals, treatment rooms, indoors	Interference with rest and recovery	#1		
Industrial, commercial, shopping and traffic areas, indoors and Outdoors	Hearing impairment	70	24	110
Ceremonies, festivals and entertainment events	Hearing impairment (patrons:<5 times/year)	100	4	110
Public addresses, indoors and outdoors	Hearing impairment	85	1	110
Music through headphones/ Earphones	Hearing impairment (free-field value)	85 #4	1	110
Impulse sounds from toys, fireworks and firearms	Hearing impairment (adults)	-	-	140 #2
	Hearing impairment (children)	-	-	120 #2
Outdoors in parkland and conservation areas	Disruption of tranquillity	#3		

6.0 BASELINE NOISE ENVIRONMENT

44 An environmental noise survey of the application site has been undertaken to determine existing baseline noise levels.

6.1 General

45 The survey was undertaken using a combination of automated and attended noise measurements.

46 An automated sound level analyser was installed at the site between 11 and 14 June 2010. The analyser was positioned within the rear garden of no. 37 Gloucester Road, close to the side boundary of no. 55 Cumberland Road. This is shown as Position A1 on **Figure 2** attached at **Appendix B**.

47 Critical period attended measurements were also undertaken at four measurement positions, as follows:

Position M1: On the pavement adjoining 55 Cumberland Road. The measurement microphone was positioned 1.5m above ground level.

Position M2: On the pavement of Station Road, adjoining the side boundary of 37 Gloucester Road. The measurement microphone was positioned approximately 1m from the existing timber boundary fence and 1.5m above ground level.

Position M3: On the pavement of Station Road, adjoining an existing pedestrian access point to the North Harrow Assembly Halls. The measurement microphone was positioned approximately 1m from the boundary fence and 1.5m above ground level.

Position M4: On the pavement adjoining the boundary of 36A and 38 Cambridge Road. The measurement microphone was positioned approximately 1m from the existing timber boundary fence and 1.5m above ground level.

The approximate locations of the measurement positions are also shown on **Figure 2** attached at **Appendix B**.

6.2 Instrumentation

48 The following instrumentation was *used* for the survey:

Position A1

Larson Davis Precision Sound Level Analyser	Type 824
GRAS ½" Condenser Microphone	Type 40AE
Brüel and Kjær Sound Level Calibrator	Type 4230
Proscon Environmental Outdoor Microphone Kit	

Position M1, M2, M3 and M4

Brüel and Kjær Precision Sound Level Analyser	Type 2250
Brüel and Kjær ½" Condenser Microphone	Type 4189
Brüel and Kjær Sound Level Calibrator	Type 4231
Brüel and Kjær Windshield	Type UA 0237

49 All instrumentation hold current UKAS accredited calibration certificates. The sound level analysers were calibrated prior to each survey and the calibration was checked upon completion. No drift was found to have occurred.

6.3 Survey Procedure

50 The automated sound level analyser (Position A1) was set to record measurements of the L_{A90} , L_{Aeq} and $L_{Amax,fast}$ sound levels were over consecutive 5 minute sample periods.

51 The manned sound level analyser (Positions M1, M2, M3 and M4) was programmed to record measurements of the L_{A90} , L_{Aeq} , L_{A10} and $L_{Amax,fast}$ sound levels (amongst other parameters) over consecutive 1 second time periods, together with corresponding frequency spectra.

52 Please refer to **Appendix C** for an explanation of the acoustic terminology used above.

53 During the surveys, contemporaneous notes were kept to identify the source of observed noise events.

6.4 Survey Results

54 The results of the measurements made at Position A1 are presented on **Time History Graph 1** attached at **Appendix D**.

55 The noise levels measured at Positions M1, M2, M3 and M4 are summarised on **Table 1** attached at **Appendix E**.

6.5 Discussion of Results

56 Noise levels measured at all locations were dominated by local traffic movements on Station Road.

57 The highest noise levels were measured at Position M2 and M3 directly on Station Road.

58 Lower noise levels were recorded at M4 and A1 due to the increased distance, reduced angle of view to Station Road and partial screening afforded by existing boundary fences.

59 The lowest noise levels were recorded at Position M1 (in Cumberland Road).

7.0 SITE SUITABILITY – NOISE INTRUSION TO INTERNAL AREAS

7.1 Design Guidance

60 The results of the environmental noise surveys confirm that the Station Road façade of the proposed development will be subject to relatively high levels of traffic noise. Given that the proposed development is to include a number of “noise sensitive” uses (e.g. offices, a library, exhibition spaces, seminar rooms, prayer area, etc), it is important that the external fabric of the development is appropriately designed to ensure that internal noise levels are compatible and appropriate for the proposed internal functions.

61 In this respect, PPG 24 advises that:

“Developments such as offices, hospitals and schools will contain buildings and activities which are noise-sensitive. But these developments are likely to occupy sizeable sites and to contain a proportion of buildings and activities which are less noise-sensitive. The NEC

principle² cannot therefore be sensibly applied to such developments and it will be more appropriate to refer to specific guidance on internal noise standards in respect of each activity. General information can be found in BS 8233 1987.”

62 Based on the guidance given in BS 8233: 1999 (which supercedes the 1987 version referenced in PPG24), noise intrusion into the development would need to be controlled to the following internal noise levels:

Area	Design Target Based on Guidance of BS 8233: 1999
Offices - Boardroom	40 – 50 dB L _{Aeq,T}
Offices – Open Plan	45 – 50 dB L _{Aeq,T}
Seminar Rooms	35 – 40 dB L _{Aeq,T}
Exhibition Space	40 – 50 dB L _{Aeq,T}
Dining Area	50 – 55 dB L _{Aeq,T}
Library	40 – 50 dB L _{Aeq,T}
Children’s Play Spaces	50 – 55 dB L _{Aeq,T}

7.2 Existing Noise Environment

63 Based on the results of the environmental noise survey, the following L_{Aeq,16hour} sound levels at each measurement location have been estimated.

Measurement Position	Calculated Daytime Sound Level, L _{Aeq,16hour} dB
A1	54
M1	52
M2	70
M3	69
M4	54

² “Noise Exposure Category” principle used to determining the suitability of a site for residential development .

- 64 The results reported for Position A 1 are based on the on the logarithmic average of automated noise monitoring results for daytime hours (07:00 to 23:00 hours) and including a “façade” correction of 3dB ³
- 65 The values reported for Positions M1, M2, M3 and M4 have been determined from the $L_{A10,18\text{hour}}$ sound levels calculated in accordance with the “Shortened Measurement Procedure” set out in Department of Transport Welsh Office publication “Calculation of Road Traffic Noise” and estimation of $L_{Aeq,16\text{hour}}$ values given in paragraph 9 of Annex 1 of PPG24.
- 66 A façade correction of 3dB has also been applied to Position M2 and M3 given that measurement were made close to boundary fences.

7.3 Assessment

- 67 For most building façades, the control of noise transmission into the building will be determined by the acoustic performance of glazed elements. In terms of a preliminary assessment, the required outside-to-inside noise reduction of the windows can be calculated by taking the open site noise level and subtracting the required internal criterion for the relevant period.
- 68 Based on the noise levels set out in section 7.2 above and the internal noise level guidance given in section 7.1, the following Table sets out the sound reduction performance that would be required for the principal rooms areas of the development fronting Station Road:

Area	Required Sound Reduction, dB(A)
Offices - Boardroom	19 – 29 dB(A)
Offices – Open Plan	19 – 24 dB(A)
Seminar Rooms	29 – 35 dB(A)
Exhibition Space	19 – 29 dB(A)
Dining Area	14 – 19 dB(A)
Library	19 – 29 dB(A)
Children’s Play Spaces	15 – 20 dB(A)

³ Annex 1 of the Department of the Environment’s “Planning and Policy Guidance Note 24” (PPG24) states that “Levels of noise from road and rail traffic are often specified at one metre from a facade, and these facade levels should be assumed to be 3 dB(A) higher than levels measured away from any buildings...”

69 Annex 6 of PPG 24 provides guidance with regard to the typical noise reduction for different noise sources that can be expected of a façade. For traffic road noise, the following values are given:

Type of Glazing	Difference Between dB(A) Levels Outside and Inside
Single Glazing	28
Thermal Double Glazing	33
Secondary Glazing	34

70 New thermal double glazing is to be included throughout the proposed development. As such, it can be seen that the sound reduction capabilities of the proposed external fabric will be fully compatible with controlling external noise intrusion into the development in line with the guidance given in BS 8233: 1999.

71 Notwithstanding the above conclusion, it is clear that the internal noise levels could increase when windows are open. It is therefore proposed that the development will incorporate an appropriately attenuated passive ventilation scheme and/or is mechanically ventilated/air conditioned in order that windows can remain closed whilst maintaining adequate ventilation and thermal comfort control.

7.4 Conclusions

72 An assessment of traffic noise intrusion into the proposed development confirms that the proposed use of double glazed windows throughout the development will adequately control internal noise levels in accordance with relevant national and local planning guidance and other reference documents.

73 It is, however, noted that any effective acoustic control will only be achieved when windows are closed. In this respect, appropriately designed passive and/or mechanical ventilation systems will be implemented within the scheme design to enable windows to remain closed.

74 The provision of an appropriate sound insulation scheme can be enforced by means of appropriate Planning Conditions. The Applicants have confirmed that they are happy to accept a condition requiring full details of the sound insulation performance of windows and ventilation details to be submitted to the Local Authority for approval prior to occupation of the development.

8.0 SITE SUITABILITY – EXTERNAL AMENITY AREAS

8.1 Design Guidance

75 The proposed development is to include two garden areas – a “Garden of Contemplation” to the rear of the main building and a “Garden of Discovery” to the rear of the Children’s Play Centre.

76 At first floor level, there is a terrace which overlooks Station Road.

77 Guidance in BS 8233 recommends that:

“In gardens and balconies, etc. it is desirable that the steady noise level does not exceed 50dB $L_{Aeq,T}$ dB and 55dB $L_{Aeq,T}$ should be regarded as the upper limit.”

78 Whilst this guidance is intended for gardens/balconies associated with dwellings, the guidance is considered to provide a useful bench-mark value.

79 The WHO guidelines also recommend that the noise level in outdoor school playgrounds does not exceed 55dB L_{Aeq} .

8.2 Existing Noise Levels

80 The results of the noise measurements at Position A1, M1 and M4 range between 52 to 54 dB $L_{Aeq,16hours}$. It can therefore be seen that the existing noise levels towards the rear of the site should provide an appropriate level of amenity for the gardens associated with the development.

81 The results of the noise measurements at Position A3 was 69 dB $L_{Aeq,16hours}$. Making allowance for the increased distance from the road, reduced angle of view and the notional screening benefit that will be provided by the parapet at the front of the terrace, the noise levels on the balcony are expected to be in the order of 60 dB(A). Whilst noise levels on this terrace exceed the guidance for balconies suggested in BS 8233: 1999, the resulting conditions will still enable terrace users to converse. For example, if reference is made to the World Health Organisation’s “Guidelines for Community Noise”, this states that:

“Speech in relaxed conversation is 100% intelligible in background noise levels or about 35dB(A), and can be understood fairly well in background levels of 45dB(A).”

Speech with more vocal effort can be understood when the background sound pressure level is about 65dB(A)."

82 In view of the above it considered that whilst consideration could be given to locating this amenity area on the rear of the development to provide a lower noise environment (due to the screening afforded by the building itself), this would introduce an external elevated, external use, in closer proximity to the boundary with 38 Cambridge Road. Locating the terrace on the front of the development significantly increases the distance to any adjoining noise sensitive premises – the nearest dwellings are within Chaucer House, located in excess of 30m to east of the development at the junction of Cambridge Road and Station Road.

8.3 Conclusions

83 It is concluded that the existing noise environment experienced at the rear of the site is appropriate for the provision of outdoor amenity areas (gardens) which would comply fully with the guidance values set out in BS 8233: 1999 and the WHO "Guidelines for Community Noise".

84 Whilst noise levels on the proposed first floor terrace area are likely to be higher than the guidance of BS 8233: 1999, noise levels will still enable terrace uses to converse and the location of the terrace therefore provides a considered compromise with regard to the desire for providing an outdoor seating area and balancing the wish to minimise any noise impact on adjoining dwellings.

9.0 OPERATIONAL NOISE "BREAK-OUT"

9.1 GENERAL

85 The proposed development includes a variety of differing uses. However, the majority of such uses are characterised by low or modest noise levels that are not considered to present any risk of adverse noise break-out. The following sections provide a brief description of room uses/ noise sources:

Sports Hall and Gymnasia

- 86 It is understood that these areas will be used for sport and fitness purposes only. Whilst a PA system will be installed to these areas, this will not be used to provide commentary on sporting events nor amplified music and will solely be restricted for voice alarm announcement purposes.
- 87 In light of the above, typical noise sources in these areas are likely to include speech between gym members; participants shouting instructions to each other during team sports, referee's whistles, etc.
- 88 Whilst some of these noise sources can generate appreciable noise levels, it should be noted that the Sports Hall and Gymnasia are located at Basement Levels -1 and -2. As such, activity within these areas will be very well contained within the building envelope and is not considered likely to present any concerns in respect of noise "break-out" to adjoining dwellings.

Offices and Boardrooms

- 89 These areas will be used for normal administration purposes/meetings and will not therefore generate significant noise. As such, noise "break-out" to adjoining dwellings should have no adverse noise implications.

Library

- 90 It is understood the library will be used for quiet study and reference purposes. As such, activity within this area is not considered likely to present any concerns in respect of noise "break-out" to adjoining dwellings.

Dining Area and Servery

- 91 It is understood that the dining area and servery will not have a PA System (other than for voice alarm announcements). As such, typical noise levels within the dining area will be characterised by the usual "hubbub" of conversational noise generated by such uses and the sound of crockery and cutlery.
- 92 It is proposed that internal finishes within these areas will be selected to minimise the general reverberant build-up within this space. In light of this (and the intrinsically good sound reduction

capabilities of the external building fabric), noise “break-out” to adjoining dwellings should have no adverse noise implications.

Prayer Hall

93 It is understood that the Prayer Hall will be used for the Azaan (call to Prayer) and recitation/lecture purposes. It is further understood that the area will have a speech reinforcement system to ensure adequate intelligibility within the Prayer Hall.⁴

94 Guidance given in BS 6259: 1997: “Code of Practice for the Design, Planning, Installation, Testing and Maintenance of Sound Systems” states that:

“A pre-requisite of any sound system is that it is loud enough to be heard clearly. Research has shown that under normal quiet listening conditions, optimum speech intelligibility is achieved at sound levels of 65dB(A) to to 75dB(A) with the range of 70dB(A) to 75dB(A) preferred”.

95 In light of the above, it can be seen that whilst a speech reinforcement system is proposed for this area, recommended source sound levels remain relatively modest.

96 As highlighted earlier, the proposed development is to adopt the use of high performance thermal, double glazed units. It is estimated (conservatively) that such glazing will offer a sound insulation in excess of 35dB(A) against amplified spoken speech. Any noise break-out will also be naturally attenuated over the intervening distance between the building and adjoining dwellings. In light of these factors, noise “break-out” to adjoining dwellings is not considered to have any adverse noise implications.

Exhibition Areas

97 The Exhibition Areas of the development are also to have a speech reinforcement system. It is understood that this will be used to recite predominantly Islamic and Quranic verse. It is further understood that the in-house sound system will not be used for music amplification and that the use of third party amplification equipment during receptions and weddings will not be permitted.

⁴ It should be noted that the Azaan and lectures will only be broadcast within the Prayer Hall. The development will not include any external loudspeakers through which the Azaan could be broadcast.

98 In light of the modest operational noise levels, sound reduction capabilities of the external fabric of the development and separation of the buildings from adjoining dwellings, noise “break-out” to adjoining dwellings is not considered to have any adverse noise implications.

Children’s Play Centre

99 It is understood that the maximum occupancy of the Play Centre will be restricted to 30 children (aged 2 to 10 years) and that the opening times of the centre will be restricted to 10.00 to 18.00 hours, Monday to Saturday and 10.00 to 16.00 hours, on Sundays and Bank Holidays.

100 It is further understood that a voice paging system will be installed within the Play Centre which will be used to provide safety/child protection announcements or other “emergency” announcements. In light of this, internal noise levels within this building will be characterised by children’s voices/laughter, typical of children at play. The internal finishes within these spaces will be selected to include suitable acoustically absorptive treatments to minimise the natural reverberant build-up of activity noise.

101 Based on in-house measurement data for children’s internal play centres, typically operational noise levels are in the order of 80dB $L_{Aeq,T}$.

102 Noise break-out to adjoining residential properties is not therefore considered to have any adverse noise impact implications – operational noise levels will be adequately attenuated by the proposed external building fabric and intervening separation to adjoining dwellings. Other management controls (in particular, the proposed hours of operation), will further ensure that the centre does not operate during the evenings or at night.

9.2 Conclusions

103 Operational noise levels associated with the proposed development are likely to be relatively modest. This, in conjunction with the good level of sound reduction that will intrinsically be offered by the proposed external building fabric and physical separation of the development to adjoining noise sensitive properties, should ensure that there is no significant adverse noise impact due to noise “break-out” from the development.

104 It should be noted that many of the activities considered in the preceding assessments already take place at the North Harrow Community Centre and that such uses have taken place for the past 18 years. Contact has been made with the Council’s Environmental Health Department

whose records confirm there have been no noise related complaints associated with the historic use of the site. This is considered to provide robust empirical evidence that the day to day operation of the Community Centre should not give rise to any increase risk of disturbance to adjoining dwellings. On the contrary, the proposal to develop a new Community Centre provides an opportunity for providing an increased level of sound insulation (for example, through the use of high performance double glazed facades).

105 The acceptability of noise break-out from the development can be controlled by means of suitable engineering measures (e.g. use of acoustically absorptive internal finishes and the sound reduction capabilities of the proposed external building fabric. In this respect, conditions can be imposed requiring full details of noise control treatments/sound insulation to be submitted to the Local Authority for approval prior to occupation of the development. The Applicants have confirmed they are happy to accept such conditions.

10.0 NOISE GENERATED BY ADDITIONAL PEDESTRIAN AND VEHICULAR TRAFFIC

10.1 Existing Use of the North Harrow Assembly Hall

106 The existing use of the North Harrow Assembly Hall is understood to include:

- Prayers every Friday at midday.
- Prayers followed by a lecture /talk, each Friday between 20.00 to 22.30 hours.
- Prayer meetings every evening starting between 20.00 to 20.30/20.45 hours.
- Prayer meetings at midday on Saturdays and Sundays.
- At weekends, classes for GCSE and A-Level students (lasting approximately 3-4 hours)
- Each Sunday between 08.00 to 09.30 hours, a course about understanding the Quran.
- Each Sunday between 10.00 to 12.30, classes for children ages 3 to 16 years.
- Mother and Toddler groups two mornings a week.
- On weekdays, various exercise and yoga classes.
- Social functions, including occasional weddings of members of the community.

107 Full details of current attendance numbers are presented in the Transport Statement accompanying the application prepared by Mentor Milestones Limited.

10.2 Proposed Use of the North Harrow Community Centre

108 It is understood that the proposed development (operating as the North Harrow Community Centre) will continue to serve the existing community functions outlined above. However, the following changes are expected:

- The current attendance of the midday Friday prayers is understood to typically be in the order of 280 people, but can reach numbers of around 500. This is because the Assembly Hall is currently used as an overflow to the Harrow Central Mosque whilst it is being redeveloped. Following completion of these works, the future expected attendance at the North Harrow Community Centre will reduce significantly.
- The proposed development introduces additional community facilities that will attract additional attendance and the current operating hours will be extended. Full details of expected attendance numbers are presented in the Transport Statement prepared by Mentor Milestones Limited.

10.3 Noise Impact of Car Parking Activity

109 Car parking for the NHCC is to be located between the main block and Children's Centre. The proposed car park is to provide a total of 31 vehicle parking spaces of which there are 27 standard sized spaces, 2 disabled spaces and 2 motorcycle spaces. The proposed car park location is very broadly similar to the areas currently used for parking at the North Harrow Assembly Halls and the main vehicular access point to the site will also be broadly aligned with the existing access.

110 The proposed car park directly adjoins the rear gardens of nos. 45 to 55 Cumberland Road. The boundary at the edge of the car park is to comprise a 2.1 m high fence (1.8m solid with 0.3m trellis to top) with hedge planting in front. This fencing will provide an acoustic screening benefit to the adjoining dwellings.

111 Eleven of the proposed car parking spaces are to be located below the first floor projection of the main building. As such, the spaces are effectively under cover. It is proposed that the soffit of the car parking area will be treated with an acoustically absorptive finish to minimise reverberant sound build up within this covered area. Again, these works will help minimise car parking noise transfer to adjoining dwellings.

112 An assessment of the impact of car parking activity on the rear of nos. 45 to 55 Cumberland Road has been undertaken. The assessment is based on the following information and assumptions:

Noise Data

113 The Table below summarises data extracted from our in-house databases for typical noise “events” associated with car parking activities:

Activity	Typical Noise Level @ 3m, dB	
	L _{AE}	L _{Amax,fast}
Car parking in space	72	71
Car door slam	64	72
Car starting / pulling away	71	69
Car pass-by	73	71

Barrier Attenuation

114 Allowances have been made for barrier attenuation that will be provided by the boundary fences. The height of the sound source has been assumed to be 0.5m above ground level (as adopted in the calculation methodology of the Department of Transport Welsh Office publication “Calculation of Road Traffic Noise” (CRTN). Given that the proposed use of the Centre could extend beyond 23.00 hours (i.e. into the “night-time” period defined in PPG24 / World Health Organisation Guidelines of Community Noise, etc.), a “receiver” height of 4m has been used to determine noise levels incident on the first floor windows of these properties. Barrier loss values have been determined in accordance with the CRTN.

Geometrical Spreading

115 Appropriate corrections have been made to account for the distance between car parking activity and the adjoining dwellings. When calculated average (L_{Aeq,T}) noise levels, “line” source propagation characteristics have been assumed for vehicle movements. “Point” source propagation characteristics have been assumed when determining L_{Amax,fast} sound levels of events.

General Assumptions

116 In order to assess the potential noise impact of parking activities, a “worst case” assumption has been made. To this end, the assessment assumes that **each** of the 29 car parking spaces will be

- parked in, returned to and vehicles driven out of the car park in a one hour period. This “worst case” scenario is considered to represent a highly pessimistic view of actual parking activity.
- 117 This worst case assessment concludes that the resulting sound level from car activity incident of the rear of nos. 45 to 55 Cumberland Road is 42dB $L_{Aeq,1hour}$. The maximum sound level would be 54dB $L_{Amax,fast}$.

Assessment

- 118 Existing ambient sound levels currently experienced by nos. 45 - 55 Cumberland Road, are likely to be best represented by the results of the automated noise measurements made at Position A. Typical ambient $L_{Aeq,1hour}$ sound levels during the operational hours of the proposed Community Centre typically vary between 51 to 55 dB(A).
- 119 It can therefore be seen that the “worst case” car parking sound level is 9 to 13 dB(A) **lower** than the existing ambient noise level.
- 120 It is therefore concluded that car parking activity should have no adverse noise impact on adjoining dwellings.
- 121 Since the proposed Community Centre may operate until 00.00 hours on Fridays and Saturdays, an assessment of possible sleep disturbance has also been undertaken. Guidance in the World Health Organisation’s “Guidelines for Community Noise” recommends that in order to minimise the risk of sleep disturbance, the external sound level outside bedrooms should not exceed a value of 60dB $L_{Amax,fast}$. (A similar value is promoted in BS 8233: 1999). It can therefore be seen that the maximum sound levels associated with car parking activity should not present any concerns in respect of sleep disturbance.

10.4 Noise Impact of Pedestrian Activity

- 122 The main access point to the building is on Station Road. The nearest dwellings to this access are Chaucer House (to the east) and the Utopia/Savoy Court developments which front Station Road.
- 123 Based on information contained within the Mentor Milestones Transport Assessment, the maximum typical occupancy of the proposed development is expected to be 128 (occurring on a Friday between 1300 and 1400 hours).

124 An assessment of the impact of car parking activity on Chaucer House has been undertaken. The assessment is based on the following information and assumptions:

Noise Data

125 The Table below summarises data extracted from our in-house databases for typical noise “events” associated with car parking activities:

Activity	Typical Noise Level @ 3m, dB	
	L _{AE}	L _{Amax,fast}
Two pedestrians passing (talking)	80	67
Small group of people (4) meeting and chatting on pavement	81	76

General Assumptions

126 In order to assess the potential noise impact of pedestrian activities, a “worst case” assumption has been made, assuming that the typical maximum occupancy of the development (128) will arrive and depart the centre during the same hour period. It is further assumed that half of this number will remain in the vicinity of the entrance chatting to each other, before leaving in pairs talking to each other.

Assessment

127 This worst case assessment concludes that the resulting sound level from pedestrian activity incident on Chaucer House is 36dB L_{Aeq,1hour}. The maximum sound level would be 52dB L_{Amax,fast}.

128 The existing ambient sound levels measured at Position M3 on Station Road between 13.00 to 14.00 hours was 71 dB L_{Aeq,10mins} and up to 86dB L_{Amax,fast}.

129 It can therefore be seen that the “worst case” pedestrian sound level is around 35 dB(A) **lower** than the existing L_{Aeq} ambient noise level and maximum sound levels are around 34 dB(A) lower than existing values.

130 It is therefore concluded that pedestrian activity should have no adverse noise impact on adjoining dwellings.

131 As highlighted above, the North Harrow Assembly Hall has served the community under the BWF for the past eighteen years. Contact has been made with the Council's Environmental Health Department whose records confirm there have been no noise related complaints associated with the historic use of the site. This is considered to provide robust empirical evidence that day to day parking and pedestrian activity associated with the NHCC should have no adverse noise implications.

10.5 Weddings

132 It is understood that a number of weddings may take place at the Community Centre which may attract a greater number of movements that might be associated with the day to day use of the development.

133 It is understood that the maximum number of guests attending weddings may be in the order of 500 to 600.

134 Given that the car park of the development has a defined capacity, wedding events cannot result in a greater level of car park noise than already assessed in section 10.3 above and which is concluded not to have any adverse noise impact on adjoining dwellings. It is understood that appropriate management controls will be put in place to direct excess vehicular traffic to nearby public car parks. In this respect, the impact of vehicular movements associated with weddings is not considered to give rise to any significant risk of increased noise disturbance.

135 It should also be noted that weddings already occur at the existing North Harrow Assembly Hall. As highlighted above, contact has been made with the Council's Environmental Health Department whose records confirm there have been no noise related complaints associated with the historic use of the site. This is considered to provide robust empirical evidence that occasional larger events at the proposed NHCC should have no adverse noise implications.

136 It is understood that the North Harrow Community Centre management team will fully vet all proposed weddings at the centre to ensure that events take place in full accordance with strict managements practices to ensure that this situation continues.

10.6 Conclusions

- 137 Assessments of pedestrian and car parking activity associated with the proposed development conclude that there should be no adverse noise impact insignificant in the context of the existing noise environment characterising the site and its environs.

11.0 BUILDING SERVICES NOISE EMISSIONS

- 138 The proposed development will include the installation of new mechanical services plant. The final design strategy is yet to be finalised but options under consideration include:

Heating

Option A – Main heating systems to be ground source and air source heat pumps with boiler top up / backup. Solar panels to provide baseload hot water.

Option B – As for Option A with heat pumps but with CHP to provide domestic hot water and some heating, with boiler back-up.

Cooling

Mixed mode approach to air conditioning system (passive natural ventilation to above ground spaces used when suitable with the option of using comfort cooling where necessary).

Basement level provides passive cooling via earth coupling, along with good shading.

Ventilation

Limited passive natural ventilation during summer, as described above.

Heat recovery ventilation during heating season.

- 139 It must obviously be ensured that proposed mechanical services installations are suitably designed to control noise emissions and preserve the amenity of existing noise sensitive properties in the vicinity of the site.

11.1 Acoustic Design Targets

140 BS 4142: 1997 provides guidance on measuring and assessing noise from machinery and plant. If reference is made to this guidance, in order to conclude that noise constitutes a “positive indication that complaints are likely”, the rating level of a noise source ($L_{A,r}$) needs to be at least 10dB below the prevailing background (L_{A90}) sound level at the nearest dwellings (during the proposed operational hours of the plant).

141 It is understood that the core operational hours of the proposed development are to be:

Monday to Thursday (incl)	:	08:00 to 2300 hours
Fridays and Saturdays	:	08:00 to 00:00 hours
Sundays	:	08:00 to 22:00 hours

142 Gym facilities would be available earlier allowing patrons entry from 06.00 hours.

143 Based on the results of the environmental noise surveys undertaken at the site, the lowest background noise level measured at Position A1 during the above operational hours was 36dB L_{A90} .

144 It is therefore proposed to adopt an acoustic design target of 26dB L_{Ar} for proposed new plant. This target should be achieved at a distance of 1m from the nearest window of any adjoining dwelling, with all plant operating normally.

11.2 Conclusions

145 The environmental survey data has been used to determine minimum background noise levels during the proposed operational hours of the development. These data have been used to determine environmental noise emission limits for proposed building services installations, in accordance with national planning policy and associated guidance documents.

146 The control of plant noise emissions associated with the proposed development can be enforced by means of appropriate Planning Conditions. The Applicant has confirmed they are happy to accept such a condition.

12.0 CONCLUSIONS

147 An assessment of the potential noise impact of the proposed North Harrow Community Centre has been undertaken. The assessment concludes:

Traffic Noise Intrusion

148 An assessment of traffic noise intrusion into the proposed development confirms that the proposed use of double glazed windows throughout the development will adequately control internal noise levels in accordance with relevant national and local planning guidance and other reference documents. It is, however, noted that any effective acoustic control will only be achieved when windows are closed. In this respect, appropriate means of passive/mechanical ventilation will also be implemented within the scheme design to enable windows to remain closed.

149 The provision of an appropriate sound insulation scheme can be enforced by means of appropriate Planning Conditions. The Applicants have confirmed they are happy to accept a condition requiring full details of the sound insulation performance of windows and alternative means of ventilation to be submitted to the Local Authority for approval prior to occupation of the development.

Operational Noise

150 An assessment of noise generated within the development has been undertaken. It is concluded that the development will not have any significant adverse noise impact on the amenity of adjoining dwellings.

151 This can be enforced by means of appropriate Planning Conditions, e.g. requiring full details of noise control treatments (e.g. the acoustically absorptive linings); details of speech reinforcement systems and the sound insulation capabilities of the external building fabric to be submitted to the Local Authority for approval prior to occupation of the development. The Applicants have confirmed they are happy to accept such conditions.

Noise Generated by Vehicular/Pedestrian Activity

152 The proposed use of the site as the NHCC will result in additional parking activity and pedestrian movements. "Worst case" assessments of both forms of activity conclude that noise generation is

insignificant in the context of the existing noise environment characterising the site and its environs.

Plant Noise Emissions

- 153 The environmental survey data has been used to determine minimum background noise levels during the proposed operational hours of the development. These data have been used to determine environmental noise emission limits for proposed building services installations, in accordance with national and local planning policy and associated guidance documents.
- 154 The control of plant noise emissions associated with the proposed development can be enforced by means of appropriate Planning Conditions. The Applicants have confirmed they are happy to accept such a condition.

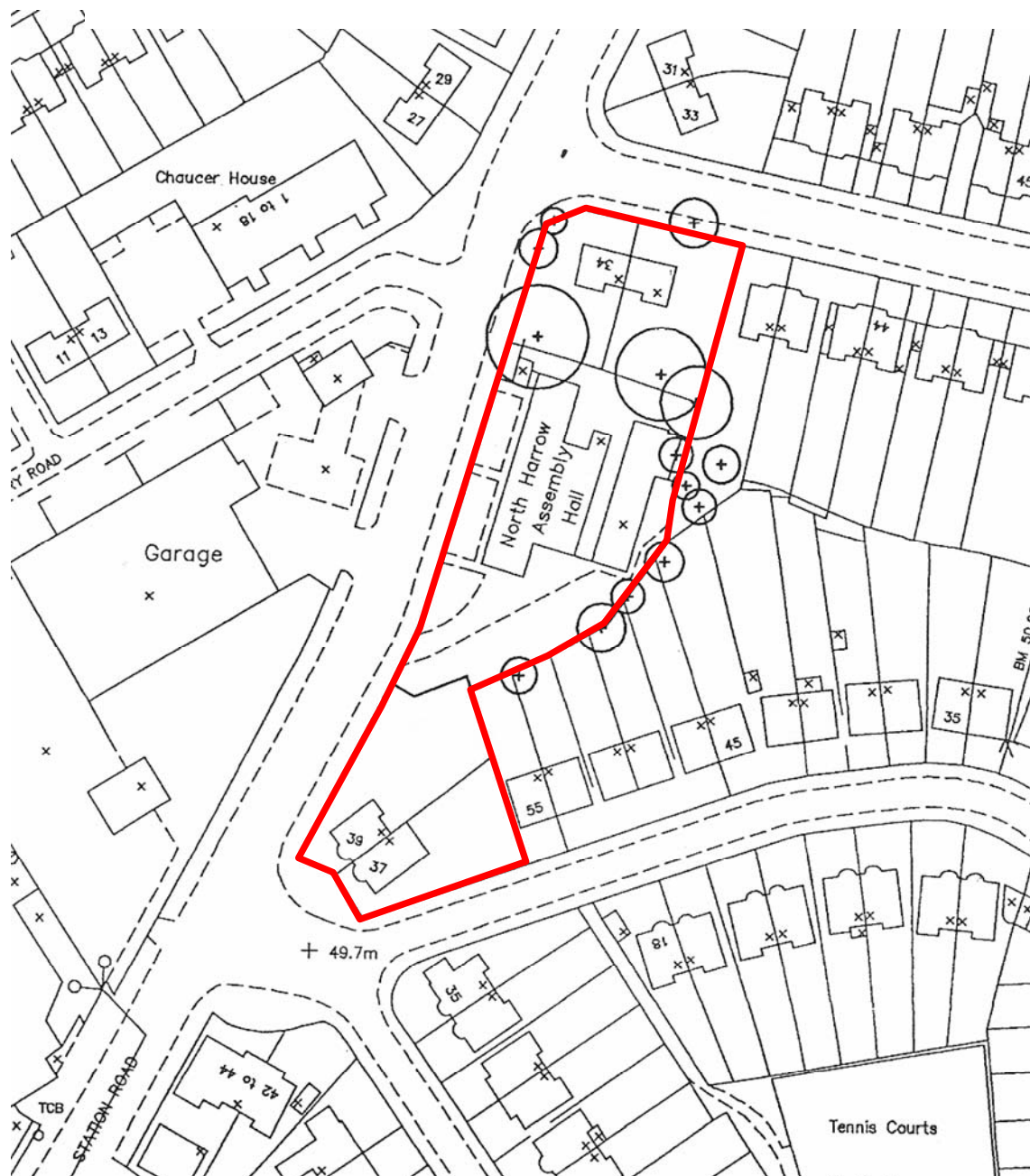
Overall Conclusion

- 155 The above assessments conclude that any noise impact from the proposed development can be satisfactorily controlled in line with national and local planning policy guidance and other relevant noise related guidance.
- 156 The Applicants are committed to being good neighbours. Testimony to this fact is clearly provided by the fact that the Council's Environmental Health Department records confirm that there have been no noise related complaints associated with the historic use of the site as a community facility. This includes the past eighteen year period when the site has been operated by the BWF.



**PAUL GRAY BSc(Hons), MIOA
THE EQUUS PARTNERSHIP LTD**

APPENDIX A



NORTH HARROW COMMUNITY CENTRE

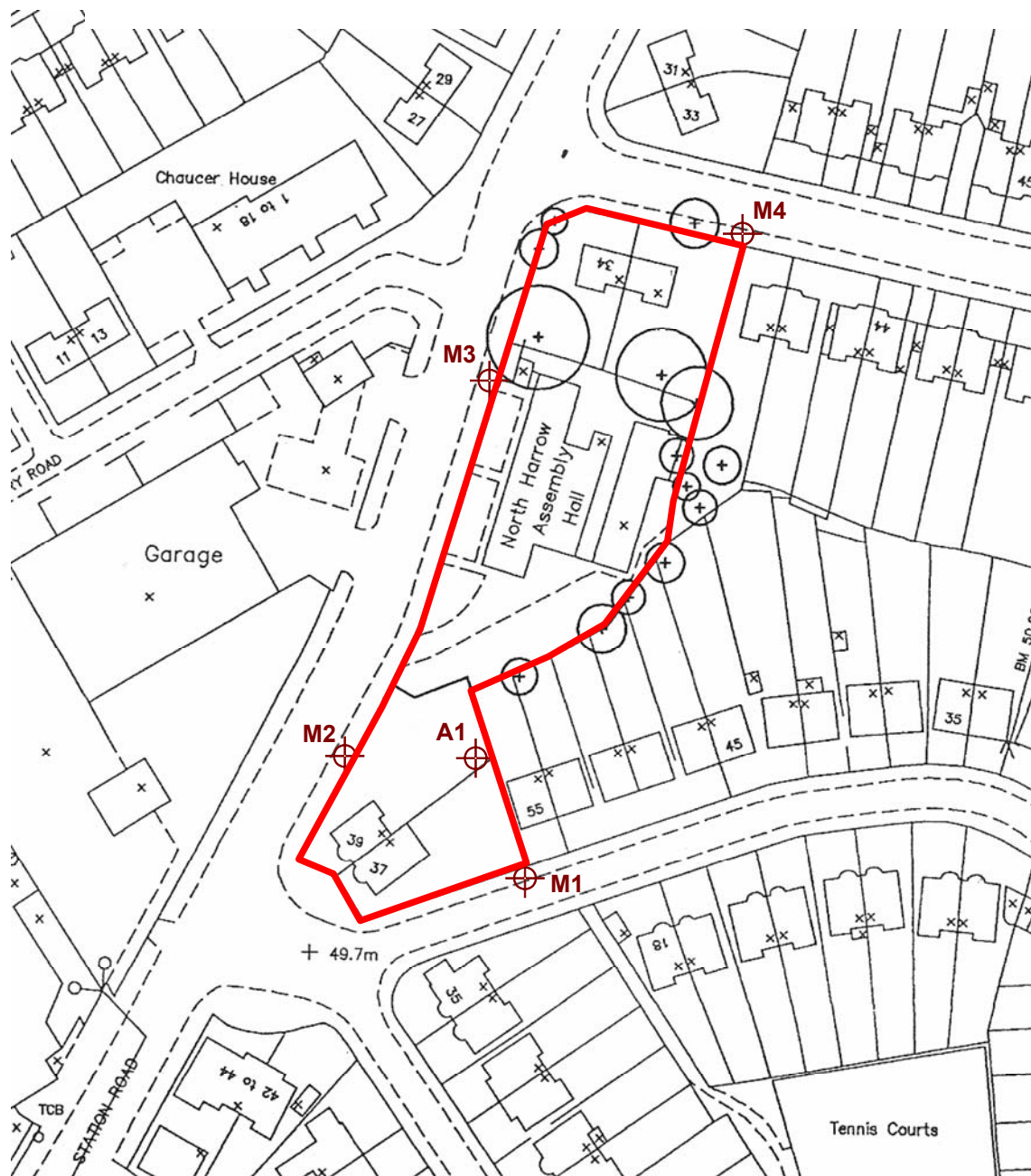
Site Location

Park House
Greenhill Crescent
Watford Herts WD18 8PH
Telephone: 01923 213625
Fax: 01923 213863

FIGURE 1

THE
EQUUS
PARTNERSHIP
Member of the Association of Noise Consultants
CONSULTANTS IN
ACOUSTICS

APPENDIX B



NORTH HARROW COMMUNITY CENTRE

Sketch Showing Site Location and Approximate Noise Monitoring Positions

Park House
 Greenhill Crescent
 Watford Herts WD18 8PH
 Telephone: 01923 213625
 Fax: 01923 213863

FIGURE 2

THE
EQUUS
 PARTNERSHIP
 Member of the Association of Noise Consultants
 CONSULTANTS IN
 ACOUSTICS

APPENDIX C

NORTH HARROW COMMUNITY CENTRE

Glossary of Acoustic Terminology

Decibel (dB)	The Decibel is a logarithmic unit used to express ratios of quantities such as sound pressure or sound power. The logarithmic nature of the unit means that decibel values cannot be added or subtracted in the usual way. An auditory sensation of halving or doubling of loudness equates to a decrease or increase of around 10 dB.
dB(A) or L_A	"A" weighted sound pressure level (sound level) measurements correspond roughly to the subjective impression of loudness of the average listener.
L_{eq}	The L _{eq} index is used as a method of averaging temporally or spatially varying sound levels. At a given position, it may be defined as the notional sound level which contains the same amount of acoustical energy as the actual (time varying) sound level over the same measurement period.
L₉₀	The L ₉₀ is the sound level that is exceeded for 90% of the measurement period, and is generally considered to describe the background noise, since it inherently excludes the sounds of transient events.
L₁₀	The L ₁₀ is the sound level that is exceeded for 10% of the measurement period. This parameter has historically been used to describe traffic noise.
L_{max}	The L _{max} is the maximum sound level recorded during the measurement period. The time weighting used to determine the L _{max} value should be stated (i.e. whether a "fast" or "slow" time weighting has been used).

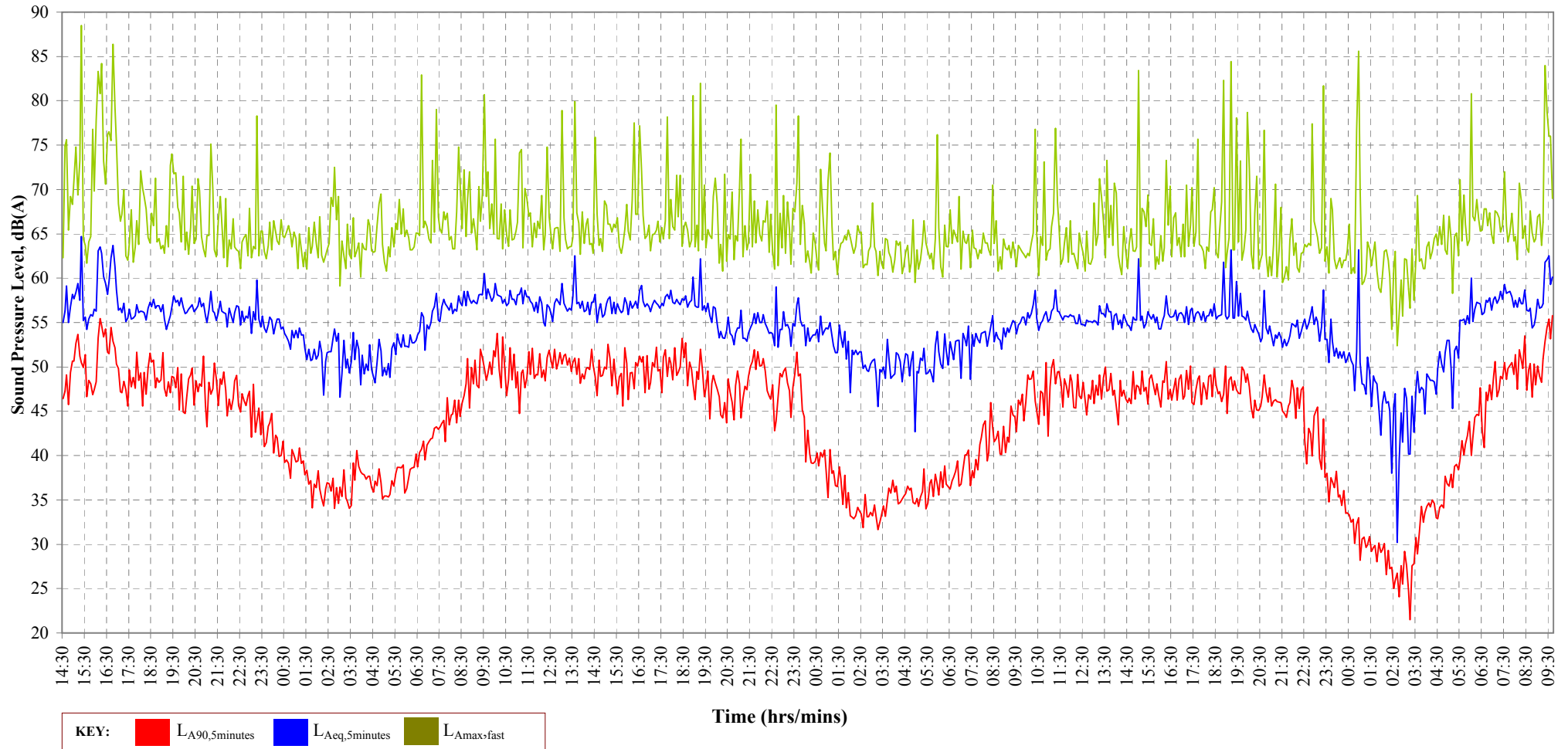
APPENDIX D

NORTH HARROW COMMUNITY CENTRE

TIME HISTORY GRAPH 1

Results of Automated Noise Monitoring: Position A1

Survey Date: Friday 11 June 2010 to Monday 14 June 2010



APPENDIX E

NORTH HARROW COMMUNITY CENTRE

TABLE 1 (Page 1 of 2)

Summary of Measured Noise Levels

Position M1 – Adjacent to 55 Cumberland Road

Time	Measured Sound Pressure Level, dB re 20µPa			
	L _{A90}	L _{Aeq}	L _{A10}	L _{Amax}
11.00 – 12.00	46	52	55	69
12.00 – 13.00	45	51	54	67
13.00 – 14.00	46	52	55	70

Position M2 – Southern End of Station Road

Time	Measured Sound Pressure Level, dB re 20µPa			
	L _{A90}	L _{Aeq}	L _{A10}	L _{Amax}
11.00 – 12.00	55	72	76	85
12.00 – 13.00	54	71	75	83
13.00 – 14.00	55	72	76	86

Position M3 – Northern End of Station Road

Time	Measured Sound Pressure Level, dB re 20µPa			
	L _{A90}	L _{Aeq}	L _{A10}	L _{Amax}
11.00 – 12.00	58	71	75	85
12.00 – 13.00	56	70	74	86
13.00 – 14.00	57	71	75	83

NORTH HARROW COMMUNITY CENTRE

TABLE 1 (Page 2 of 2)

Summary of Measured Noise Levels

Position M4 – Canterbury Road

Time	Measured Sound Pressure Level, dB re 20µPa			
	L _{A90}	L _{Aeq}	L _{A10}	L _{Amax}
11.00 – 12.00	45	55	57	73
12.00 – 13.00	45	55	57	71
13.00 – 14.00	45	56	58	75