

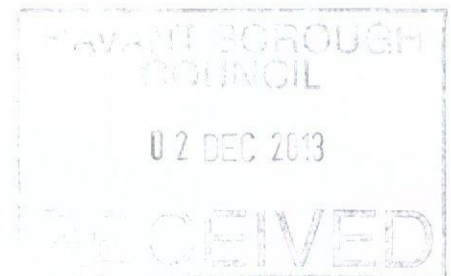


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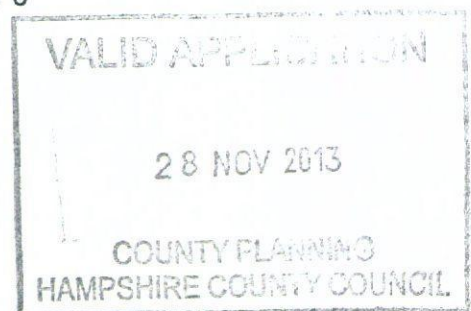
**PROPOSED SYNTHETIC TURF PITCH
PARK COMMUNITY SCHOOL
HAVANT**

NOISE ASSESSMENT



Technical Report: R4614-1 Rev 0

Date: 8th April 2013



For: Hampshire County Council
Three Minsters House
76 High Street
Winchester
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24 Acoustics Document Control Sheet

Project Title: Proposed Synthetic Turf Pitch, Park Community School, Havant
Noise Assessment

Report Ref: R4614-1 Rev 0

Date: 8th April 2013

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Document Status and Approval Schedule

Revision	Description	Prepared By	Approved By
0	Approved for Issue	David Coles	Stephen Gosling

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1.0 INTRODUCTION

- 1.1 Hampshire County Council is applying for planning permission to construct a new synthetic turf pitch (STP) on land next at Park Community School on Middle Park Way, Havant.
- 1.2 There are concerns that noise arising from the activities on the pitch may have an adverse impact on existing local residents to the south and east of the site. Accordingly, 24 Acoustics Ltd has been instructed to provide an assessment of the likely noise impact based on the proposed plans.
- 1.3 An explanation of acoustical terms used in this report is provided in Appendix A. All sound pressure levels in this report are given in dB re: 20 μ Pa.

2.0 SITE DESCRIPTION

- 2.1 The STP will be developed in the south-east corner of the land owned by the school, in place of an existing grass sports pitch. The STP will be located next to an existing Multi-Use Games Area (MUGA). The closest residential properties are located on Keyhaven Drive to the south and Middle Park Way and Selborne Avenue to the east.
- 2.2 Park Community School proposes to use the pitch during normal school operating hours as well as in the evenings during the week until 22:00 and between 09:00 and 20:00 on Saturdays and 09:00 and 18:00 on Sundays (see Paragraph 4.7 for further details).
- 2.3 The existing site layout and immediate surroundings are shown in Figure 1.

3.0 ASSESSMENT CRITERIA

NPPF Planning and Noise

- 3.1 When assessing the merits of developments which have issues relating to noise, Local Authorities are guided by the National Planning Policy Framework (NPPF) [Reference 1], published by the Department for Communities and Local Government, which supersedes the previously referred to Planning Policy Guidance (PPG) 24 [Reference 2]. The aim of the NPPF guidance is to ensure that noise does not give rise to significant adverse effects.

- 3.2 For noise from recreational and sporting activities, the local planning authority will have to take account of how frequently the noise will be generated, the level of disturbance and balance the enjoyment of the participants against the risk of causing nuisance to other people. It is also considered that, depending upon local circumstances, it may be reasonable to permit higher noise levels than (for example) from industrial developments, if there are limited hours of use and control of noise emission during anti-social hours.
- 3.3 There is no applicable standard for the assessment of noise from sports pitches. Generic guidance on planning matters related to sport and recreational facilities is given in PPG 17, Sport and Recreation [Reference 3], though specific guidance on noise is not given.
- 3.4 Guidance is also available from the National Playing Fields Association's guidelines contained in its publication "The Six-Acre Standard" [Reference 4]. This sets out the minimum recommended unscreened buffer zones between play and recreational areas, and residential properties. With a children's playground suitable for those aged 12 or younger, a distance 25 metres from the resident's boundary is advised. Where the facility or activity is for older children this distance should be increased to 50 metres. It should be noted that these are generic values and may not always be suitable.

Guidance for Impulsive Sources

- 3.5 "Guidance on the Control of Noise", published by the Chartered Institute of Environmental Health, [Reference 5], provides a methodology for the measurement and assessment of noise from Clay Target Shooting and is considered an appropriate guide for assessing noise from the proposed pitches in this instance. This methodology has been considered because shooting noise is impulsive in nature and therefore comparable with noise produced by balls rebounding or hitting the boundary fence, however it is inappropriate to use this methodology for other types of noise associated with the use of the pitch such as talking or shouting. 24 Acoustics can confirm that in the absence of other published guidance, this standard has been used to assess a wide range of impulsive recreational sources other than shooting noise (eg, noise from activities on synthetic turf pitches, skateboard parks etc).
- 3.6 The guidance suggests that there is no fixed shooting noise level (SNL) at which annoyance starts to occur, however, annoyance is less likely to occur at a mean shooting noise level (SNL) below 55 dBA, and highly likely to occur at a mean SNL above 65 dBA. It is recognised that the likelihood of annoyance at levels within this range will depend upon local circumstances.

British Standard 8233: 1999

- 3.7 Whilst the NPPF and PPG 24 relate to the assessment of external free field noise levels, it is also important to consider good sound insulation. In this case, it is appropriate to refer to BS 8233: 1987 for guidance on suitable internal levels (superseded by BS 8233: 1999 'Sound insulation and noise reduction for buildings' [Reference 6]).
- 3.8 BS 8233 provides internal design sound levels for 'good' and 'reasonable' conditions. The figures shown in Table 1. A maximum internal noise level of 45 dB $L_{Amax,fz}$ is also given for "reasonable" internal noise levels.

Criterion	Typical Situation	Design Noise Levels (dB $L_{Aeq,T}$)	
		Good	Reasonable
Resting/ sleeping conditions	Living rooms	30	40
	Bedrooms	30	35

Table 1: Indoor Ambient Noise Levels ref: BS 8233

- 3.9 It should be noted that the noise levels specified are for anonymous sources, such as road traffic or continuously running plant for which occupants may tolerate higher noise levels. Noise levels and appropriate time assessment periods are not given for other types of noise.

British Standard 4142: 1997

- 3.10 Guidance on the assessment of industrial noise in a mixed industrial and residential area is given in BS 4142: 1997, Method for Rating industrial noise affecting mixed residential and industrial areas [Reference 7]. The Standard provides a method for rating noise of an industrial nature and to determine the likelihood of complaints from occupants of nearby residential properties.
- 3.11 The method is based on the difference between the background noise level (L_{A90}) without the source and the specific noise level ($L_{Aeq, 1hour}$ during the day) of the source at the receiver location. The noise level from the source (known as the specific noise level) should be weighted by 5 dB if it is considered that an identifiable character (eg, tonality, impulsiveness) exists at the receptor location. The background noise level is then subtracted from the rating level (the specific noise level plus any weighting for character) and the difference used to assess the likelihood of complaints, as shown in Table 2.

Difference	Assessment
Around +10 dB or more	Complaints likely
Around +5 dB	Of marginal significance
-10 dB or more	Positive indication that complaints are unlikely

Table 2: BS 4142 Assessment Outcomes

- 3.12 It is relevant to note that BS 4142 is not considered directly applicable for the assessment of noise from recreational activities but can be used to provide an outline indication of possible complaints.

Summary

- 3.13 Based upon the review of standards described above, noise from the proposed pitches has been assessed in accordance with the following methodologies:

- Guidance for impulsive noise sources using the SNL;
- BS 8233: 1999 for internal noise levels (on the basis of an upper level of 35 dB L_{Aeq} for internal noise levels in living rooms);
- BS 4142: 1997 for external levels relative to the background noise level at the most critical time.

4.0 ENVIRONMENTAL NOISE MEASUREMENTS

Ambient Noise Levels

- 4.1 Ambient noise monitoring has been carried out to assess prevailing noise levels in the vicinity of residential properties on Keyhaven Drive, Middle Park Way and Selborne Avenue. Measurements were obtained over the period 14th to 18th March 2013. The instrumentation was set up near the southern boundary of the school, as shown in Figure 1.

- 4.2 Environmental noise levels were measured using the following instrumentation:

Norsonic Type 1 precision sound level meter
Brüel and Kjær acoustic calibrator

Type Nor140;
Type 4231.

- 4.3 The meter was equipped with an environmental microphone and extension cable. The instrumentation was powered by external batteries, stored in a weatherproof case. The calibration of the instrumentation was checked before and after the survey and no signal variation occurred. Calibration of 24 Acoustics' equipment is traceable to National Standards.
- 4.4 The instrumentation was configured to continuously measure and store overall A-weighted statistical parameters such as L_{Aeq} and L_{A90} (all measured on fast response) in 1 minute intervals. Measurements were made in accordance with BS 7445: 1991 "Description and measurement of environmental noise Part 2 - Acquisition of data pertinent to land use" [Reference 8].
- 4.5 The principal noise sources during the survey were from road traffic using local roads and from the school itself (during operating hours). Periods of rainfall were experienced at times during the noise survey. These periods have been removed from the analysis. Wind speeds outside of the rainfall periods were generally lower than 5 m/s.

Results

- 4.6 The results of the ambient noise survey are shown in Figure B1 in Appendix B. The results show typical ambient noise levels in the order of 54 and 51 dB L_{Aeq} during the daytime and evening periods respectively.
- 4.7 For the purposes of this assessment, the following hours have been assumed:
- Weekdays: 09:00 - 22:00
 - Saturdays: 09:00 - 20:00
 - Sundays: 09:00 - 18:00
- 4.8 Although the ambient and background noise levels vary during the daytime, a background noise level of 48 dB $L_{A90,1 \text{ hour}}$ has been used (as per the requirements of BS 4142) and has been selected on the basis of the worst case (i.e. lowest) value which occurs during the late evening period. The measured value is considered representative for both groups of receptors as, although not measured for properties on Middle Park Way, the measured ambient levels are likely to be lower and hence indicate a greater level of impact.

5.0 ASSESSMENT

Impulsive Noise Levels

- 5.1 The calculation of peak noise levels has been undertaken using measurements of football activities taken from 24 Acoustics' in-house database. The source noise measurements were made at a synthetic turf pitch in Winchester and source noise levels were controlled by both ball bouncing events and shouting between players.
- 5.2 The mean Shooting Noise Level (SNL) is calculated from the logarithmic average of the 25 highest noise levels measured over a 30 minute period from the instantaneous A-weighted, and fast time weighted sound pressure level.
- 5.3 Maximum impulsive noise levels from a typical enclosed multi-use games area with 5-a-side football taking place would be in the order of 75 dB $L_{Amax,f}$ at 25m (from the centre of the pitch and without acoustic screening). It is considered that the highest maximum fast weighted values measured will be approximately equal to the SNL.
- 5.4 The noise levels from the impulsive noise sources have been calculated at the nearest affected properties as shown in Table 3 (unlike the assessments below, no cumulative assessment is given owing to the way the SNL is calculated).

Receptor	Predicted SNL
23 Selborne Avenue	67
78 Middle Park Way	67
16 Keyhaven Drive	66

Table 3: Predicted Noise Levels

- 5.5 The levels of 66 and 67 dBA indicate that complaints may be likely. However, it is considered that the upgrading of an existing sports facility, as is the case here, is less likely to cause disturbance than where a new facility is proposed. Nevertheless, it is considered prudent to incorporate a 1.8 m bund on the eastern boundary and a 2 m barrier providing a minimum superficial weight of 15kg/m² (eg, 22 mm impervious solid timber panels) on the southern boundary. Figure 2 shows the recommended location of the bund and acoustic barrier. Predicted SNL with the barriers in place are shown below in Table 4.

Receptor	Predicted SNL
23 Selborne Avenue	59
78 Middle Park Way	59
16 Keyhaven Drive	58

Table 4: Predicted SNL with Bund/Acoustic Fence in Place

- 5.6 It is considered that the attenuated noise levels will be acceptable on the basis that the land is currently used for the same purpose and does not represent a significant intensification.

BS 8233: 1999

- 5.7 Using a maximum (worst-case) source noise level of 56 dB L_{Aeq} at 25 m, the resultant noise levels within the nearest properties would be subject to a reduction from inside to outside of between 10 to 15 dBA (depending of the extent to which the window is open, room volume and glazing configuration).
- 5.8 The resultant internal noise levels are shown in Table 5, taking into account a loss of 8 dBA from the bund / acoustic fence.

Receptor	Resultant Noise Level dB L_{Aeq} , 1 hour
23 Selborne Avenue	27
78 Middle Park Way	27
16 Keyhaven Drive	26

Table 5: Predicted Internal Noise Levels – With Mitigation

- 5.9 The above values assume a typical 13 dBA loss between outside and inside for a wide open window. Levels with a partially open window or closed window will be lower.

BS 4142: 1997

- 5.10 The predicted values and rating levels under BS 4142 (assuming the noise barriers are in place and a correction of +5 dB for character of the noise) are shown in Table 6.

Description	Noise Level, dBA		
	23 Selborne Avenue	78 Middle Park Way	16 Keyhaven Drive
Level from Pitch, dB L_{Aeq}	40	40	39
Specific Noise Level, dB L_{Aeq}	45	45	44
Background Noise Level, dB L_{A90}	48	48	48
Rating Level	-3	-3	-4

Table 6: Predicted Noise Levels - With Mitigation

- 5.11 This assessment outcome is significantly lower than “marginal significance” for the closest residential properties and hence considered acceptable.

Summary

- 5.12 Noise from the proposed pitch has been assessed using a combination of assessment methods. A 1.8 m bund is recommended for the eastern boundary and a 2.0 m acoustic fence (minimum superficial weight of 18kg/m²) is recommended for the southern boundary (as shown in Figure 2).
- 5.13 With the above recommendations, the predicted SNL is in the lower end of the range in which it is not possible to establish an outcome as disturbance is possible. However, given the proximity of the existing MUGA (and lack of complaints arising from activities within) and the benefits the proposed STP will offer the community, it is considered that complaints are unlikely as a result of impulsive noises.
- 5.14 A noise assessment in accordance with BS 8233 shows that predicted internal noise levels are unlikely to cause disturbance to residents in the closest properties.
- 5.15 An assessment of external noise levels in accordance with BS 4142 shows that the proposed STP is unlikely to cause a loss of amenity to residents in the closest properties.

6.0 CONCLUSIONS

- 6.1 24 Acoustics Ltd has reviewed the potential impact of noise associated with a new synthetic sports pitch at Park Community School, Havant.
- 6.2 An environmental noise survey has been carried out to determine prevailing ambient noise levels at the nearest affected properties. As there is no directly applicable standard for the assessment of noise from sports facilities, a combination of tests have been undertaken. The tests have highlighted the need for a 1.8 m bund along the eastern boundary and a 2 m acoustic barrier on the southern boundary of the pitch to reduce noise levels.
- 6.3 It is concluded that with the recommended measures given above, noise from the proposed synthetic turf pitch is unlikely to cause unreasonable disturbance to occupiers of the nearest residential properties.

REFERENCES

1. National Planning Policy Framework (2012).
2. Planning Policy Guidance 24, Planning and Noise (1994).
3. Planning Policy Guidance 17: Planning for Open space, Sport and Recreation (2002).
4. "The Six Acre Standard" National Playing Fields Association (2001).
5. Clay Target Shooting: Guidance on the Control of Noise (2003).
6. BS 8233:1999 Sound insulation and noise reduction for buildings. Code of practice (1999).
7. BS 4142: 1997 Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas (1997).
8. British Standard 7445: 1991 Description and measurement of environmental noise Part 2 - Acquisition of data pertinent to land use (1991).



Project: Park Community School STP	Description: Existing Site Plan and Measurement Position		 24Acoustics www.24acoustics.co.uk
DWG No: Figure 1	Scale: N.T.S.	Rev: A	
Date: March 2013	Drawn By: DC	Job No: 4614-1	



APPENDIX A – ACOUSTIC TERMINOLOGY

Noise is defined as unwanted sound. The range of audible sound is from 0 to 140 dB. The frequency response of the ear is usually taken to be around 18 Hz (number of oscillations per second) to 18000 Hz. The ear does not respond equally to different frequencies at the same level. It is more sensitive in the mid-frequency range than the lower and higher frequencies and because of this, the low and high frequency components of a sound are reduced in importance by applying a weighting (filtering) circuit to the noise measuring instrument. The weighting which is most widely used and which correlates best with subjective response to noise is the dBA weighting. This is an internationally accepted standard for noise measurements.

For variable sources, such as traffic, a difference of 3 dBA is just distinguishable. In addition, a doubling of traffic flow will increase the overall noise by 3 dBA. The 'loudness' of a noise is a purely subjective parameter, but it is generally accepted that an increase/ decrease of 10 dBA corresponds to a doubling/ halving in perceived loudness.

External noise levels are rarely steady, but rise and fall according to activities within an area. In attempt to produce a figure that relates this variable noise level to subjective response, a number of noise indices have been developed. These include:

i) The L_{Amax} noise level

This is the maximum noise level recorded over the measurement period.

ii) The L_{Aeq} noise level

This is "equivalent continuous A-weighted sound pressure level, in decibels" and is defined in British Standard BS 7445 [1] as the "value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T , has the same mean square sound pressure as a sound under consideration whose level varies with time".

It is a unit commonly used to describe construction noise and noise from industrial premises and is the most suitable unit for the description of other forms of environmental noise. In more straightforward terms, it is a measure of energy within the varying noise.

iii) The L_{A10} noise level

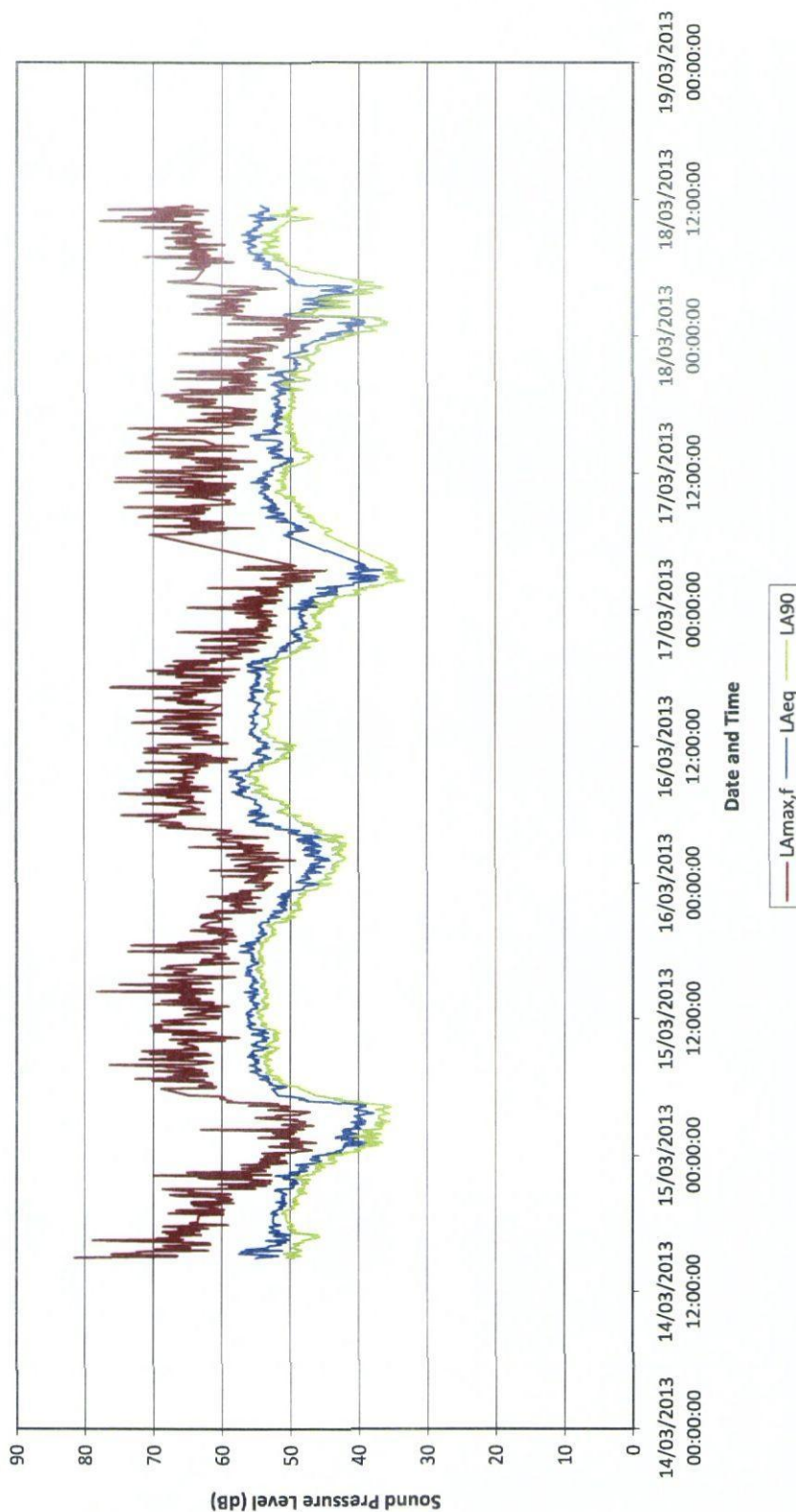
This is the noise level that is exceeded for 10% of the measurement period and gives an indication of the noisier levels. It is a unit that has been used over many years for the measurement and assessment of road traffic noise.

iv) The L_{A90} noise level

This is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during the quieter periods. It is often referred to as the background noise level and is used in the assessment of disturbance from industrial noise.

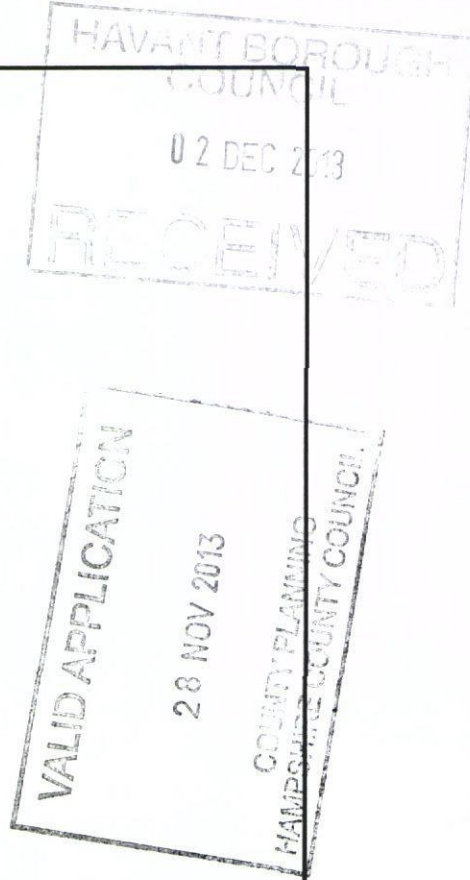
APPENDIX B - ENVIRONMENTAL NOISE SURVEY RESULTS

Figure B1: Environmental Noise Survey Results
14th - 18th March 2013



HERMITAGE STREAM ARBORICULTURAL SURVEY - PARK SCHOOL, REACH C

Ref. no.	Species	Ht / Range	CD / Range	Bole dia.	LB	Qual	Age	SLE	W/life	Bat Pot	Condition and Comments
T1	<i>Crataegus monogyna</i> Hawthorn	6.5	5.5	app. 400 base	2	B	M	20-40	2	2B/3	Large old hedgerow tree in a prominent location. Small amount of ivy, unlikely to be of bat potential. Old bark wound on trunk. Snags and quite a lot of minor dead wood within crown. Slightly thin at top but otherwise very densely branched. Generally sound and healthy.
S2	<i>Prunus spinosa</i> Blackthorn 90% <i>Sambucus nigra</i> Elder 10%	6	S	ms	0	B	Y to M	20-70	2	2B/3	Scrub growing along both sides of railings and on land between fence and stream. Group consists of a mature clump of blackthorn with young suckers and a couple of elders. Railings cutting into some of the stems. Decay, small cavities and some dead stems. Torn wounds and broken branches where flailed.
T3	<i>Quercus robur</i> Pedunculate Oak	5	4	120 at 1.5	1	C	Y	80+	3	3	Of good growth potential, nice form. Normal vigour.
T4	<i>Fraxinus excelsior</i> Ash	11	12	580 at 1.5	1.5	A	M	20-40	2	2B	A lot of lichens on trunk. Old wound on trunk occluding. Torn wound with a split. Decay and small cavities in several old pruning cuts. Slightly below average vigour: small amount of minor dead wood and crown thinning at top. Overall condition adequate, still an important tree in a prominent location.
T5	Ash	3.5	2	400 at 1m.	1	B	EM	10-20	2	3	Has been topped, vigorous regrowth has been produced but decay has developed in some of the resulting cuts. Some potential as bird nest site.
T6	Ash	7.5	4.5	150 at 1.5	1	B	Y-EM	80+	3	3	Twin leaders arising from wide, sound fork. One snag left from low branch removal. Of normal vigour.
T7	Ash, 4no. main trees	5-6.5	3 to 5	ms	1	B	Y-EM	80+	3	3	Twin and multi-stemmed trees. Quite nice but close to edge of masonry bank.



HERMITAGE STREAM ARBORICULTURAL SURVEY - PARK SCHOOL, REACH C

Ref. no.	Species	Ht / Range	CD / Range	Bole dia.	LB	Qual	Age	SLE	W/life	Bat Pot	Condition and Comments
T8	Canopy: <i>Betula pendula</i> , 9no. Silver Birch Pedunculate Oak, 4no. Ash, 3no. Understorey: <i>Salix</i> species Willow, Sallow and Osier approx. 20no; <i>Corylus avellana</i> Hazel; <i>Alnus glutinosa</i> Alder, 1no. sapling; <i>Cornus</i> species Dogwood	M-VL S-M	S-M	up to 300 at 1.5	0 to 4	B/C	Y-M	0-80+	2	3	Small copse where bushcraft classes are held. About 30% of the trees have been damaged in some way, e.g. by fire, bark stripping or random cutting. Two birches and one oak are of B quality. A platform has been built about 2m. above ground level on the branches of a partially felled and split sallow, the stability of the tree and its use in this manner are questionable. The central trees are overcrowded and have been drawn up to the light, those around the edges tend to lean and some have fallen. Logs and dead wood lying around would be of habitat value but they appear to be at risk of being burnt. Carry out selective thinning of overcrowded trees if group is retained. <i>Salix</i> spp. and hazels could be coppiced or layed. Some quite dense cover provided by understorey and brambles. <i>Dalmanella concentrica</i> (Cramp Balls/King Alfred's Cakes) was growing on one of the osiers; this is apparently the first authenticated record at Kew of it growing on <i>Salix</i> . The fungus identification has been confirmed and the sample will be accessioned into the Fungarium at the Royal Botanic Gardens, Kew.
T9	Ash	9	8	ms	2	B	Y-EM	40-80	3	3	Re-grown coppice on edge of bank. Sound and healthy but with a limited future in this location.
T10	Silver Birch	13	8	350 at 1.5	0	B	M	30-60	2	3	Forks at 2m. sound and healthy. Attractive tree.

HERMITAGE STREAM ARBORICULTURAL SURVEY - PARK SCHOOL, REACH C

Key and Notes

Tree survey was carried out on 30 March and 2, 10, 11 and 30 April 2012 by Vivien Hodge, Arboricultural Consultant.

Trees were inspected from ground level by visual non-invasive means. Binoculars used where necessary to inspect canopies and inaccessible trees. Access was inadequate to survey each tree fully throughout much of the site due to the presence of fences, watercourses, scrub, ivy cover and trees being obscured by each other in wooded areas. Dimensions and condition therefore estimated as best as possible in many cases.

Approximate locations of some additional trees that were not shown on the original topographical plans have been added to the drawings, these trees should be plotted accurately.

Ref. no.

Reference number shown on drawing nos. B1780400/Tree/001-010. References start at no. 1 on each reach.

Ref. nos. prefixed T = individual trees and groups of trees.

Ref. nos. prefixed S = scrub, shrubs, hedgerows and a mixture of vegetation where scrub makes up a significant proportion of the group.

Species

Full botanic name followed common name for the first occurrence of each species, common name only used thereafter.

Ht/Range

Height estimated in metres. Height range given for groups, where feasible. Size category given where full examination not possible as follows:

S - up to 5m. high/crown diameter;
M - medium, 5m. to 10m. high/crown diameter;
L - large, 10m. to 15m. high/crown diameter;
VL - very large, over 15m. high/crown diameter

CD/Range

Crown diameter, estimated in metres. Size range and codes used as described above.

Bole dia.

Bole diameter of single stemmed trees measured at 1.5m. given in millimetres. Estimated where access was limited.

Basal diameter given for trees with two or more stems where accessible, as per BS 5837:2005 Trees in relation to construction, as the survey was commenced before publication of BS 5837:2012.

The revised version of BS5837 gives a different methodology for measuring multi-stemmed trees but this cannot be applied retrospectively without re-surveying all multi-stemmed trees.

Ms = multi-stemmed.

LB

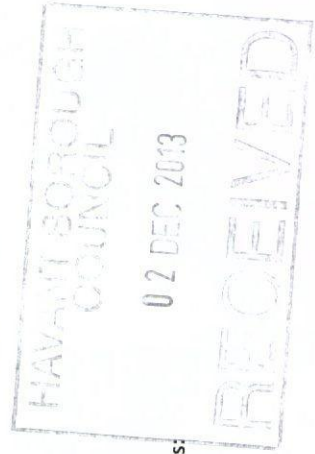
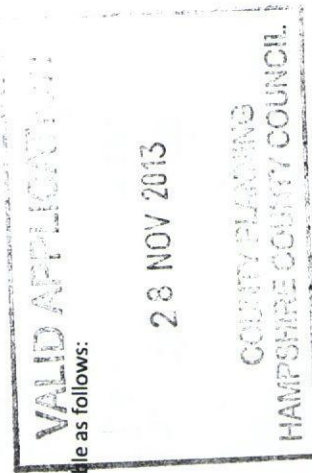
Height to lowest branch in metres.

Qual

BS quality assessment, BS5837:2012 Trees in relation to design, demolition and construction - Recommendations. Categories summarised as follows:

A High quality;

B Moderate quality;



HERMITAGE STREAM ARBORICULTURAL SURVEY - PARK SCHOOL, REACH C

- C Low quality;
- U dead/dying trees, may be of wildlife value.

Quality assessment of hedges, scrub and other woody vegetation is relative and cannot be directly compared to the quality grades of T nos.

Intermediate grades have been applied in the appendices but only the higher category is shown on the drawings for clarity.

Age	Y	young (up to 1/3 of mature height)
	EM	early mature (1/3 to 2/3 of mature height)
	M	mature (2/3 to maximum potential)
	LM	late mature (maximum mature size and likely to start to decline/die-back before long)
SLE	Safe life expectancy in years. This is only an indication, trees may remain safe for longer or shorter periods than listed; much will depend on their growing conditions. SLE could be increased by remedial work in some cases and in others will depend on tree's ability to recover from health problems.	
W/life native and the diversity of invertebrates it is likely to support.	Wildlife value. These gradings take into account such features as major aerial dead wood, cavities, ivy cover, fruit production, the tree's maturity, whether or not it is a British native and the diversity of invertebrates it is likely to support.	
	1	very high
	2	high
	3	medium
	4	low
Bat Pot	Bat potential, taking into account presence of features such as cavities, cracks, splits, loose bark and dense ivy cover:	
	Category 1 - bat roost confirmed (not used in the tree survey);	
	Category 2A - trees with high potential to support bats;	
	Category 2B - trees with moderate/low potential to support bats;	
	Category 3 - trees with negligible potential to support bats.	

Description and Comments

Comments on tree form and condition. In many cases defects are listed primarily to indicate bat roost potential and are of little consequence regarding tree health and safety.