Sandy Brown associates LLP

Barnett House
53 Fountain Street
Manchester M2 2AN

tel: (0161) 771 2020
fax: (0161) 771 2187
email: post@sandybrown.com

07296/DR
10 December 2007

Moss Lane East, Manchester

Environmental noise survey

1 Introduction

Sandy Brown Associates have been appointed by Property Route via Hodder Associates to undertake a noise survey at the site of Moss Lane East, to assist in the design of a proposed residential development at Moss Lane East, Manchester.

The purpose of the survey was to establish the existing background noise levels in the vicinity of nearby residential buildings and determine the noise levels from local road traffic.

The noise levels from road traffic are used to provide guidance on noise break-in to the proposed development.

This report presents the survey method, results of the environmental noise survey, and a discussion of appropriate specifications to comply with the regulations commissioned by Manchester City Council (MCC).

2 Site description

2.1 The site and its surroundings

Figure 1 shows the site location in relation to the surrounding area. The proposed site is currently occupied by single story industrial buildings.

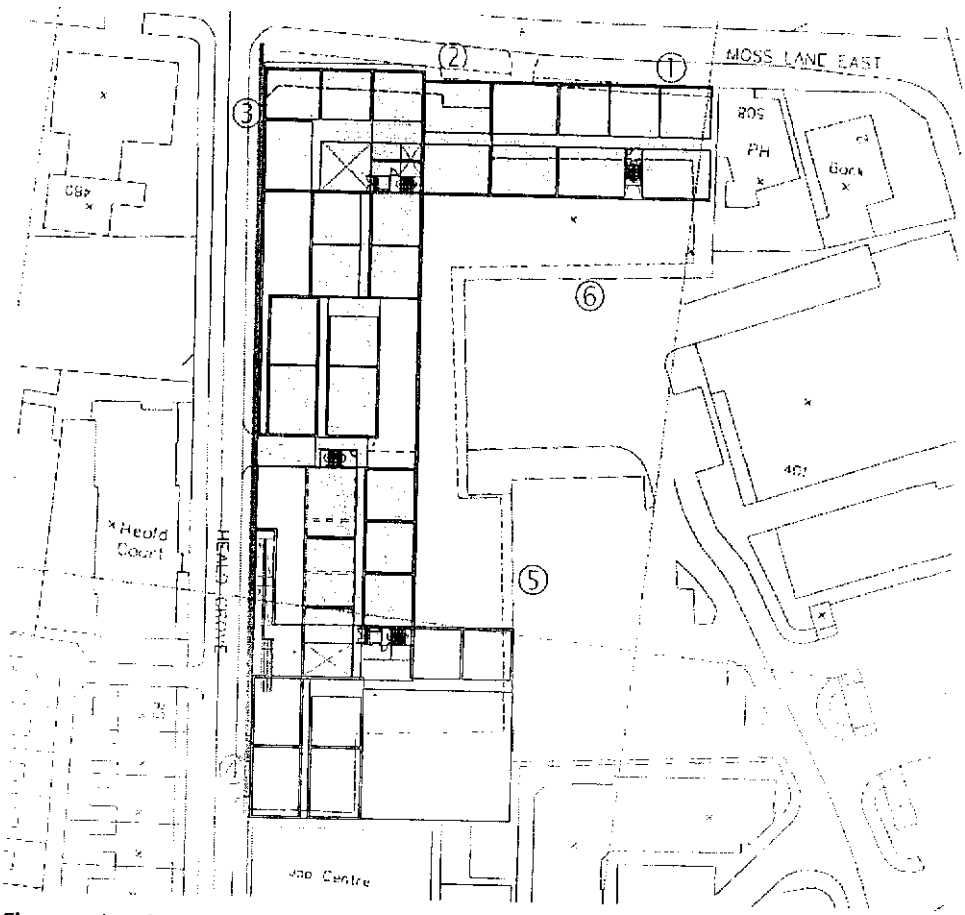


Figure 1 site plan and measurement positions - blue indicates facade measurement, red indicates free field measurement

To the North of the proposed site lies Moss Lane East and beyond this Whitworth Public Park. To the West lies Heald Grove, a residential street; here lies the closest residences to the proposed site, the nearest being approximately 10m away.

A Job Centre lies to the south of the proposed site, whilst to the East lies a car park. The Whitworth public house is adjacent to the North East of the proposed site.

Figure 2 shows measurement position 4 on Heald Grove and also indicates the location of the nearest residential properties.



Figure 2 Photo of measurement position 4

Proposal

The proposal for the site is approximately 160 residential apartments in a series of blocks from 3 to 6 stories high.

3 Environmental noise criteria

3.1 Noise ingress

Noise ingress to the development - residential units

Appropriate internal noise levels in residential development are set out in BS 8233:1999 *Sound insulation and noise reduction for buildings – Code of practice*. Table 1 shows the recommended internal noise levels in residential accommodation.

Table 1 BS8233 guidance for indoor ambient noise levels in residential buildings

	Typical situations	Design range ($L_{Aeq,T}$ dB)	
		Good	Reasonable
Reasonable resting/sleeping conditions	Living rooms	30	40
	Bedrooms*	30	35

*For a reasonable standard in bedrooms at night, BS8233 also states that individual noise events (measured with a Fast time-weighting) should not normally exceed 45 dB L_{Amax}.

3.2 Noise egress

Local planning authority conditions

Manchester City Council (MCC) requires measures to control noise egress from building services plant associated with the building.

Noise egress criteria are typically set by MCC to be 5 dB below the minimum measured L_{90} octave band sound pressure levels.

We have assumed the above criteria for this report.

4 Survey method

4.1 Manned and unmanned measurements

Due to the site not being secure it was not possible to conduct any unmanned measurements.

Day-time and night-time manned surveys were carried out at the following times in order to establish typical noise levels affecting the proposed development.

- 03 December 2007 between 14:25 - 15:35 hours
- 03 December 2007 between 23:06 - 00:55 hours
- 04 December 2007 between 14:28 - 15:01 hours

4.2 Measurement positions

Measurements were carried out at six locations around the site at day-time and night-time. These are shown in Figure 1.

4.3 Instrumentation

A Norsonic Type 118 sound level meter with a type 1225 microphone and windshield fitted was used to perform the sample measurements. The sound level meter and microphone were calibrated at the beginning and end of measurements using a type 4231 microphone calibrator. No significant calibration deviation occurred.

All measurements were made at least 1.5 m from the floor with measurements made at positions 1, 2 and 4 being free field and 3, 5 and 6 being facade measurements.

4.4 Noise indices

The meter was set to record third octave-band sound pressure levels averaged over measurement periods of T = 15 minutes and T = 5 minutes for day-time and night-time respectively. Noise indices recorded included the following:

- $L_{Aeq,T}$ The A-weighted equivalent continuous sound pressure level over a period of time, T.
- $L_{Amax,T}$ The A-weighted maximum sound pressure level that occurred during a given period. Measured using the fast time weighting in accordance with the requirements of BS 8233 : 1999.
- $L_{A90,T}$ The A-weighted sound pressure level exceeded for 90% of the measurement period. Indicative of the background noise level.

The L_{A90} is considered most representative of the background noise level for the purposes of complying with any local authority requirements.

Sound pressure level measurements are normally taken with an A-weighting (denoted by a subscript 'A', eg L_{A90}) to approximate the frequency response of the human ear.

A more detailed explanation of these quantities can be found in BS7445: Part 1: 2003 *Description and measurement of environmental noise, Part 1. Guide to quantities and procedures.*

4.5 Weather Conditions

During the survey the weather conditions were wet and overcast. Temperatures varied between 4°C at night and 8°C during the day. Average wind speed was approximately 3 m/s. These conditions were suitable for representative measurements.

5 Measurement results

5.1 Observations

During the survey, the dominant noise sources at the site were as follows:

- Regular road traffic traveling along Moss Lane East - this included taxis, cars, motorbikes and buses;
- Local road traffic along Heald Grove;
- Activity from Worldwide Foods supermarket car park to the East;
- Occasional noise from people passing by, this included footfall and talking;
- Other noise sources include live music from Saki Bar and nearby bars at night-time.

We are unaware of any other possible developments in the immediate area that may later affect the noise levels at the site.

5.2 Sample measurements

Table 2 and 3 give the measured L_{Aeq}, the maximum L_{Amax} and the L_{A90} levels at the manned positions around the site. It should be noted that measurements taken at positions 1, 2 and 4 were free field with those taken at positions 3, 5 and 6 were facade measurements.

Table 2 Day-time measured L_{A90}, L_{Aeq}, and the maximum L_{Amax}

Position	Date	Start Time (hrs)	A-weighted Sound Pressure Level		
			$L_{A90, 15mins}$	$L_{Amax, 15mins}$	$L_{Aeq, 15mins}$
			(dB)	(dB)	(dB)
1	03 Dec 2007	14:28	63	84	71
2	03 Dec 2007	14:45	62	90	71
3	03 Dec 2007	15:02	55	86	64
4	03 Dec 2007	15:20	48	79	60
5	04 Dec 2007	14:28	51	76	58
6	04 Dec 2007	14:44	52	77	56

Table 3 Night-time measured L_{A90}, L_{Aeq} and the maximum L_{Amax}

Position	Date	Start Time (hrs)	A-weighted Sound Pressure Level		
			$L_{A90, 5mins}$	$L_{Amax, 5mins}$	$L_{Aeq, 5mins}$
			(dB)	(dB)	(dB)
1-1	03 Dec 2007	23:06	58	81	68
1-2	04 Dec 2007	00:19	59	85	68
1-3	04 Dec 2007	00:24	57	81	67
2-1	03 Dec 2007	23:12	56	83	71
2-2	04 Dec 2007	00:13	55	80	66
2-3	04 Dec 2007	00:29	52	80	64
3-1	03 Dec 2007	23:18	51	75	60
3-2	04 Dec 2007	00:07	48	75	57
3-3	04 Dec 2007	00:35	47	77	59
4-1	03 Dec 2007	23:24	44	78	61
4-2	04 Dec 2007	00:01	42	77	54
4-3	04 Dec 2007	00:41	40	73	52
5-1	03 Dec 2007	23:33	44	78	61
5-2	04 Dec 2007	00:49	42	77	54
6-1	03 Dec 2007	23:39	47	61	50
6-2	03 Dec 2007	23:44	47	62	51
6-3	04 Dec 2007	00:55	47	61	49

The levels measured at position 1 and 2 were generally higher than at other measurement positions. This was attributed to the increased contribution from traffic noise along Moss Lane East.

The octave band L_{90} results can be found in tables 11 and 12 located in the Appendix.

5.3 Background Measurements

The minimum measured background noise levels, in terms of L_{A90}, are shown in Table 4 and 5.

Table 4 Minimum recorded L_{90}

Date/Time	Minimum $L_{A90,15mins}$ (dB)
03 Dec 2007 15:20 (day)	48

Table 5 Minimum recorded L_{90}

Date/Time	Minimum $L_{A90,5mins}$ (dB)
04 Dec 2007 00:41 (night)	40

6 Assessment

6.1 Noise egress

Our initial calculations, based on the noise survey results indicate the following maximum noise levels should be used as the basis for limiting external plant noise.

Table 6 Maximum noise levels, $L_{Aeq,15mins}$ 1m from facade of nearest noise sensitive receiver

Time period	Octave band centre frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Daytime 07:00 – 23:00 hrs	53	44	41	38	39	35	26	16
Night time 23:00 – 07:00 hrs	49	39	33	31	29	23	14	11

6.2 Noise ingress

From Table 2 & 3 the maximum L_{Aeq} incident on the proposed building facade to Moss Lane East, Heald Grove and the Worldwide Foods car park is shown in Table 7.

Table 7 Maximum L_{Aeq} presented to facades

Facade	Daytime (07:00-23:00 hrs) $L_{Aeq\ 15\ mins}$	Night-time (23:00-07:00 hrs) $L_{Aeq\ 5\ mins}$
Moss Lane East	71	71
Heald Grove	64	61
Worldwide Foods car park	58	61

Facade sound insulation

To achieve BS 8233 recommended levels internally, the facade needs to provide sufficient sound insulation. This includes any openings in the facade for ventilation.

Table 8 shows night time L_{Amax} values for each facade.

Table 8 Night-time L_{Amax}

Facade	Night time L_{Amax} (dB)
Moss Lane East	85
Heald Grove	78
Worldwide Foods car park	78

Initial guidance on facade sound insulation standards for the apartments is provided in Table 9. Guidance on standards for the retail units is provided in Table 10.

Values will need to be refined as the building design develops.

Table 9 Initial guidance on facade sound insulation performance to the apartments

Facade	Minimum facade sound insulation $R_w + C_{tr}$ (dB)	
	to achieve $L_{Aeq,T}$ 40 dB (living/dining rooms)	to achieve $L_{Aeq,T}$ 35 dB and L_{Amax} 45 dB at night (bedrooms)
Moss Lane East	34	43
Heald Grove	27	36
Worldwide Foods car park	21	33

Facade build-ups and ventilation

The results from Table 8 show that special consideration needs to be given to the facade design particularly for sleeping areas adjacent to Moss Lane East.

An initial guide to the façade constructions and areas required to meet the required performance is given in Table 10. The exact build-up will need to be developed at the detailed design stage.

Mechanically assisted ventilation is likely to be required for the façade adjacent to Moss Lane East.

Acoustic trickle ventilators are likely to be required to the facades adjacent to Heald Grove and Worldwide Foods car park.

Table 10 Initial guidance on facade sound insulation to apartments

Facade	Room	Example material and coverage	Sound insulation $R_w + C_{tr}$ (dB)
Moss Lane East	Bedroom	50% Secondary glazing	40
		50% Insulated masonry or drywall	54
	Living area	50% Double glazing	31
		50% Insulated masonry or drywall	54
Heald Grove	Bedroom	50% Laminated double glazing	36
		50% Insulated masonry or drywall	52
		Acoustic trickle ventilation	39
	Living area	100% Double glazing	28
Worldwide Foods car park	Bedroom	50% Double glazing	30
		50% Insulated masonry or drywall	48
		Acoustic trickle ventilation	33
	Living area	100% Double glazing	21

7 Summary

A residential development is proposed at Moss Lane East, Manchester M14.

Initial noise measurements have been made at the site. From this average and maximum sound pressure levels have been used to determine standards of facade sound insulation to achieve internal noise levels recommended in BS 8233. Initial guidance on glazing types and coverage and ventilation strategies to achieve these sound insulation standards is provided.

Measurements of background noise levels at site have also been carried out. These have been used to determine noise egress criteria outside adjacent noise sensitive premises to comply with typical conditions from Manchester City Council.

8 Appendix

Table 11 Octave band sample levels, L_{90}, (dB) during the day-time

Position	Date	Octave band centre frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
1	03 Dec 2007	69	62	59	57	57	55	50	41
2	03 Dec 2007	69	62	59	56	56	54	48	38
3	03 Dec 2007	64	54	52	50	51	47	40	31
4	03 Dec 2007	58	49	45	43	44	39	31	21
5	04 Dec 2007	64	54	49	46	46	41	33	23
6	04 Dec 2007	62	53	50	47	46	42	36	28

Table 12 Octave band sample levels, L_{90}, (dB) during the night-time

Position	Date	Octave band centre frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
1-1	03 Dec 2007	63	57	55	53	52	49	42	32
1-2	04 Dec 2007	65	61	56	53	53	50	43	31
1-3	04 Dec 2007	64	60	56	52	51	48	40	28
2-1	03 Dec 2007	65	59	55	50	51	49	41	28
2-2	04 Dec 2007	61	58	53	49	48	46	39	26
2-3	04 Dec 2007	61	57	52	47	47	44	34	19
3-1	03 Dec 2007	59	52	49	46	46	40	32	22
3-2	04 Dec 2007	56	51	48	44	43	38	30	20
3-3	04 Dec 2007	55	50	46	42	42	37	28	19
4-1	03 Dec 2007	56	48	42	40	39	33	25	16
4-2	04 Dec 2007	53	46	41	38	36	30	21	15
4-3	04 Dec 2007	54	44	38	36	34	28	19	15
5-1	03 Dec 2007	58	53	47	44	43	36	29	17
5-2	04 Dec 2007	56	51	45	42	41	35	26	16
6-1	03 Dec 2007	56	54	46	43	41	34	27	16
6-2	03 Dec 2007	58	55	47	43	41	36	29	18
6-3	04 Dec 2007	55	53	46	42	41	33	25	16

11.04 Acoustic Review Sandy Brown Associates

Sandy Brown associates LLP

Barnett House
53 Fountain Street
Manchester M2 2AN

tel: (0161) 771 2020
fax: (0161) 771 2187
email: post@sandybrown.com

07296/DR
21 December 2007

Moss Lane East, Manchester

Acoustic review

1 Introduction

Sandy Brown Associates LLP (SBA) has been appointed by Property Route via Hodder Associates to undertake an acoustic design review of a proposed residential development at Moss Lane East, Manchester.

The proposed development is to contain 7 linked multi-storey residential blocks. This report provides a review of key acoustic issues to be addressed by the design. It refers to local planning authority requirements, Approved Document E of the Building Regulations and British Standard guidance.

2 Acoustic terminology

2.1 Sound levels

Sound, or noise, levels are commonly measured in terms of the sound pressure level in decibels. The sound pressure level is often 'A-weighted' to simulate the human ear's response to sounds at different frequencies (pitch).

2.2 Sound insulation

Sound insulation is a general term to describe the reduction of sound transfer between separate spaces or through a building element (eg. a door). It is inversely analogous to light translucency of a material, ie. low sound insulation is analogous to high translucency.

Airborne sound insulation is used to describe the reduction of sound from people speaking, road traffic, televisions etc. Impact sound insulation is used to describe the reduction of structure-borne sound caused by impacts on a structure, such as from footfalls on a floor.

Common measures of Airborne Sound insulation are:

- Weighted Sound Reduction Index, R_w, which is used to describe the sound insulation provided by a building element in laboratory conditions.
- Weighted Standardised Sound Level Difference, $D_{nT,w}$, which is used to describe the sound insulation provided between two rooms.

Sound insulation is measured in decibels.

2.3 Reverberation time

Reverberation is a term used to describe the time it takes for sound to decay within a space. Large rooms with hard finishes, such as cathedrals, typically have long reverberation times; living rooms with carpets and fabric-upholstered furniture typically have short reverberation times.

If the reverberation time in a room is too long it can adversely affect speech intelligibility.

2.4 Sound absorption

Sound absorption is a term used to describe the amount of sound absorbed by a finish or object within a room. It is inversely analogous to light reflectance of a material, i.e. a finish with a low sound absorption reflects sound like an 'acoustic mirror'. A fabric upholstered sofa would provide a high level of sound absorption while a masonry wall finished with ceramic tiles would provide a low amount of sound absorption

Sound absorptive finishes are often required to control Reverberation Times within rooms.

3 Basis of review

Comments in this review document are provided based on discussions with Hodder Associates and the following documentation:

- Hodder Associates planning drawings 0501/L(-)001, 0501/L(-)013, 0501/L(-)014 emailed the 18 December 2007.
- BS 8233:1999 *Sound insulation and noise reduction for buildings – Code of practice;*
- The Building Regulations 2000 - Approved Document E, *Resistance to the passage of sound* (2003 edition).

4 Environmental noise survey

An environmental noise survey of the site has been carried out. Details of this were provided in our environmental noise survey report dated 10 December 2007 and are appended to the rear of this report.

5 Noise ingress

Advice on the control of noise ingress to meet internal noise levels recommended in BS 8233 is provided in Section 6.2 of the environmental noise planning report. It has been assumed that the proportion of glazing and solid elements in the facade build-ups is 50% glazing and 50% masonry. This being the case, external bedroom build-ups to the noisier Moss Lane facade will require secondary glazing. For living areas to the Moss Lane facade and bedrooms and living areas to the remaining facades, the noise ingress criteria could be met with double glazing.

5.1 Roof

It is understood that a concrete roof with the same structure as the floors is proposed, this will provide a high level of airborne sound insulation and good impact insulation from rainfall. It will also help to avoid difficult partition interface details associated with light roof constructions.

6 Internal sound insulation

6.1 Sound insulation criteria

Approved Document E of the building regulations sets out the following minimum standards for sound insulation between new-build dwellings. These apply to separating walls, separating floors, stairs that have a separating function, together with associated flanking constructions.

Table 1 - Approved Document E sound insulation standards

	Airborne sound insulation $D_{nT,w}+C_{tr}$ dB (minimum values)	Impact sound insulation $L'_{nT,w}$ dB (maximum values)
Separating walls	45	-
Separating floors and stairs	45	62

Approved Document E has a requirement that sets standards for the sound insulation of walls and floors within dwellings.

The requirement specifies that dwelling-houses, flats and rooms for residential purposes shall be designed and constructed in such a way that the following internal adjacencies provide reasonable resistance to sound:

- Internal walls between a bedroom or a room containing a water closet, and other rooms;
- Internal floors.

To achieve this it advises that constructions for new walls and floors within a dwelling should provide the laboratory sound insulation values set out in Table 2.

Table 2 - Approved Document E sound insulation standards for internal walls and floors

	Minimum airborne sound insulation R_w (dB)
Walls	40
Floors	40

This requirement does not apply to:

- An internal wall which contains a door
- An internal wall which separates an en-suite toilet from the associated bedroom.

6.2 Partitions

6.2.1 Separating walls between apartments

It is understood that a firm decision has not yet been reached regarding internal wall construction. The following paragraphs highlight acoustic considerations of masonry and drywall partitions.

Drywall partitions would typically be twin-stud drywall constructions. Thinner, staggered-stud constructions would be possible but this can limit positioning of sockets and switches.

A masonry option of 215 mm dense blockwork (1840 kg/m^3) with dry-lining or wet plaster finish to both sides could also be used. It should be noted that a finish of plasterboard on dabs can reduce the sound insulation provided due to resonance effects. Wet plaster finishing or plasterboard on resilient bars with mineral fibre insulation is therefore recommended acoustically.

The exact sound insulation provided by the separating wall constructions will depend on the details of the external wall system. I understand this is currently under development. This is discussed further in section 6.4.

Kitchens and bathrooms are typically sources of structure-borne noise sources. Rotating kitchen equipment such as liquidizers and washing machines and chopping of food on work surfaces create sound which, without treatment, can easily transfer into building structures. Bathrooms can have similar issues with noise from plumbing transferring into walls.

The layouts are generally well planned throughout, having similarly functioning spaces adjacent to each other minimising the potential for structure-borne noise transfer.

6.2.2 Walls between apartments and other areas

It is assumed that the separating walls between apartments and stairwells are core walls of normal weight concrete with a thickness of at least 250 mm, which provide more than enough sound insulation to meet the airborne sound insulation requirements of Approved Document E.

It is not clear from the drawings sent where the plant, if any, will be located. If it occurs next to an apartment the performance of the separating partition will depend on the

likely noise levels within the plant room. The construction of the partition will be able to be defined when the plant has been specified by the building services engineer.

6.2.3 *Internal walls within apartments*

The following walls within residential apartments, will need an acoustic R_w 40 dB rating in order to meet requirement E2(a) in Part E:

- Between a bedroom and another bedroom;
- Between a bathroom and another bathroom (within an apartment, if applicable);
- Between a bedroom and a bathroom;
- Between a living room/ kitchen and bedroom.

For guidance, a drywall construction comprising 12.5mm plasterboard on both sides of 70mm studs with 25mm mineral wool quilt in the cavity would meet this requirement.

Under the Building Regulations, the following internal partitions would not require a sound insulation rating:

- Any of the adjacencies listed above which have a door in it;
- Between a living/dining room and a kitchen or second reception room.

From the drawings sent on 18 December 2007 the internal layouts of the apartments are well planned out with no kitchens sharing a separating wall with bedrooms.

6.2.4 *Risers*

Walls between mechanical/plumbing risers and apartments should have a laboratory measured sound insulation of at least R_w = 47 dB. This could be achieved with a 92 mm thick shaftwall.

6.3 Floors / structural frame

6.3.1 *Structural floor build-up*

It is understood that a concrete frame with flat slab concrete floors is proposed. Structural floors of at least 200mm thick normal-weight concrete with a dry density of at least 2200kg/m^3 should be used in order to meet the Approved Document E requirements.

6.3.2 *Floor finishes*

Approved Document E requires that impact noise from footfalls or items being dropped on floors be controlled. Carpeted floors with underlay automatically provide sufficient impact sound insulation. However, hard floor finishes such as tiles, timber floors and standard unbacked vinyls do not.

It is therefore typical to allow a floor finish zone of approximately 75 mm for floor finishes and any resilient layers.

For kitchens and bathrooms where tiled floors would normally be expected, it can be problematic to tile directly onto resilient layers or onto plywood substrates. The most reliable method used is therefore to pour a floated screed so that any standard floor finish can then be installed.

A traditional floated screed could consist of 65 mm sand-cement on a resilient layer of mineral fibre. Thinner proprietary gypsum screeds of 45 mm which have quicker drying times are now also commonly used (eg. Gyvlon).

Floated screed floors also provide an advantage in kitchens and bathrooms in that they continue beneath fixtures. This means that structure-borne noise from washing machines and impacts on work surfaces is also controlled.

If timber floors are used for living rooms and bedrooms they could be laid directly onto structural floors, either onto continuous resilient layers or with timber battens on resilient strips.

The resilient layer in combination with the floated layer will need to provide a weighted reduction in impact sound pressure level of at least ΔL_w = 29 dB. A resilient layer thickness of 10 mm should be allowed for under both timber and screeded floors.

6.4 Facade – flanking sound insulation

It understood that a brick cladding is proposed. The inner lining may be blockwork or double-layered plasterboard with mineral fibre cavity insulation.

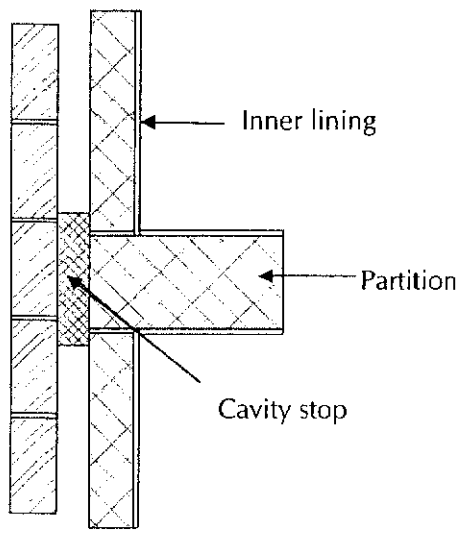
6.4.1 Interfaces with separating walls

Brick cladding can work well acoustically provided the inner lining is built from slab-to-slab and is discontinuous at separating walls. Figure 1 shows a generic detail for partition interfaces taken from Approved Document E.

6.4.2 Interfaces with internal partitions

If blockwork inner linings are used to the external walls, internal partitions within apartments could simply abut these. If the facade has a plasterboard inner lining, internal partitions would need to be recessed into it.

Figure 1 Inner lining to partition detail



6.5 Doors

6.5.1 Internal doors

It is recommended that doors between apartments and corridors should be of at least 45 mm solid-core timber with full perimeter seals to achieve R_w = 29 dB.

Internal doors within apartments have no sound insulation requirement.

6.6 Lifts

It is noted from the drawings sent 18 December 2007 that each lift shares a partition with an apartment. There are two main issues regarding noise from lift shafts:

1. Airborne noise transfer from the lift itself
2. Structure borne noise caused by vibrations from lift movements

Ideally the location/orientation of the lifts changed so that they no longer share a separating wall with an apartment. However, if this is not possible the lift core wall should be lined with 2 x 12.5mm plasterboard on independent studs with at least 50mm cavity insulation.

7 Acoustic finishes

7.1 Corridors and common parts

Approved Document E has a requirement to control reverberation in the common parts of buildings containing flats or rooms for residential purposes.

The requirement applies to corridors, stairwells, hallways and entrance halls which give access to dwellings. To achieve the requirement sound absorptive finishes are required.

The requirement could be met by use of Class C sound absorbent ceilings to shared corridors. Typically this would be achieved by a lay-in perforated metal plank ceiling.

If access is not required to the corridor ceiling void, perforated plasterboard or a smooth plaster-like sound absorbent treatment could be used.

If corridors have carpeted floors with underlay it is possible to reduce the amount of sound absorptive treatment on the ceilings. Carpeted floors are advantageous because they control noise from footfalls and luggage.

8 Building services noise and vibration

8.1 Service penetrations

Service penetrations through floors and partitions between apartments should be avoided. It is recommended that soil and waste water pipes in particular should transfer into risers or into corridor ceiling/floor voids rather than transferring through slabs. This will avoid complicated boxing details and potential sound insulation weak points.

8.2 Proposed ventilation systems

Preliminary advice on attenuators to ventilation systems was provided in our environmental assessment report, a summary of which follows:

- Mechanically assisted ventilation to bedrooms on the Moss Lane East facade;
- Acoustic trickle ventilation to bedrooms on the remaining facades.

The exact performance of the ventilation systems in different locations will need to be discussed with the building services engineer and reviewed along with the required opening sizes during the detailed design stage.

8.3 Car park extract

If mechanical extraction is proposed it is advised that the extract ductwork be designed to slow face velocities to approximately 3 m/s at the extract louvre when in smoke mode. Alternatively, for a small car park, natural ventilation may suffice. This will need to be discussed with the building services engineer.

8.4 Environmental noise criteria

Environmental noise criteria outside noise-sensitive windows are provided in our environmental noise survey report. The same criteria should also apply outside any opening windows to noise-sensitive premises.

8.5 Internal noise criteria

Recommended building services noise criteria for internal spaces are provided in Table 3.

Table 3 - Maximum building services noise levels for internal spaces

Area	Maximum NR level
Apartments	35
Corridors	40
Car park	50
Plant room	70

8.6 Vibration

Vibration amplitudes from building services equipment on floors and walls should not exceed the curves given in Table 4 with reference to BS 6472: 1992 "Evaluation of Human Exposure to Vibration in Buildings (1 Hz to 80 Hz)"

Table 4 - Maximum vibration amplitudes

Area	Maximum BS 6472 curves
Apartments	1.4
Other areas	4

Maximum vibration amplitudes from building services should not exceed a magnitude which causes the maximum noise criteria to be exceeded.

11.05 Bat and Bird Survey Report JW Ecological

J W ECOLOGICAL LTD

Bat & Bird Survey Report

Moss Lane East, Manchester

J W Ecological Ltd.
Unit 33 Hawarden Ind. Park
Manor Lane
Hawarden
Cheshire
CH5 3PZ

Tel: 0845 838 2646
Fax: 0871 661 9701
E-mail: enquiries@jwecology.co.uk
Web: www.jwecology.co.uk

Author:	Checked by:
Name: Joseph Whittick BSc(Hons.) AIEEM	**Name:** Jamie Moore BA(Hons) MSc
Date: 09/01/08	**Date:** 09/01/08

CONTENTS

		PAGE
1.0	**INTRODUCTION**	**3**
2.0	**SITE LOCATION AND DESCRIPTION**	**3**
3.0	**DESKTOP STUDY**	**3**
3.1	Consultees	3
3.2	Bat and Bird Records	4
4.0	**LEGISLATIVE AND PLANNING CONTEXT**	**4**
4.2	Bats	4
4.3	Barn Owls	4
4.4	Black Redstart	5
4.5	Birds	5
5.0	**BAT SURVEY METHODS**	**6**
6.0	**BIRD SURVEY METHODS**	**6**
7.0	**SURVEY RESULTS**	
7.1	Bat Survey	7
7.6	Barn Owl Survey	7
7.7	Black Redstart	7
7.9	Birds	8
8.0	**CONCLUSIONS & RECOMMENDATIONS**	**8**
8.1	Bats	8
8.2	Barn Owls	8
8.3	Black Redstart	8
8.4	Birds	9
7.0	**REFERENCES**	**9**

APPENDICES

APPENDIX 1: Drawings
APPENDIX 2: Photographs

1.0 INTRODUCTION

1.1 J W Ecological Ltd were commissioned in December 2007 to undertake a bat and bird scoping survey of a disused industrial building on the corner of Moss lane East and Heald Grove, Rusholme, Manchester (SJ 84955 95631). See drawing D/JWE/281/001 (Appendix 1).

1.2 The aims of the survey were to:

- Identify any evidence of bat usage.
- Assess bat roost potential.
- Identify any evidence of bird usage, particularly Barn owls and Black Redstart, and assess suitability as a nesting site
- Assess the likely impact of the loss of the structure on local bat and bird populations.

2.0 SITE LOCATION AND DESCRIPTION

2.1 The site is located on the corner of Moss Lane East and Heald Road, Rusholme, Manchester.

2.2 The site comprises a disused factory building. Adjacent to the roads the building is brick built under a pitched slate roof and has a number of dormer windows with hanging tiles to the sides (see photograph 1, Appendix 2). The main area of the building is a large open space beneath a pitched slate roof with large roof lights extending the length of the building (see photograph 2, Appendix 2). The roof is boarded and timber clad on the interior with a gap between the boarding/cladding and the roof tiles. On the exterior the roof has been covered with a bitumen type material. The front section of the building, adjacent to Moss Lane East, comprises a number of offices with a hanging polystyrene tile ceiling and a loft space above (see photograph 3, Appendix 2). A large flat-roofed extension constructed of breeze block and cladding is attached to the eastern face of the building (see photograph 4, Appendix 2).

2.3 The site is bordered by student accommodation buildings to the east, a Job Centre to the south, Heald Road to the west and Moss Lane East to the north. Whitworth Park is located on the opposite side of Moss Lane East. The park contains numerous mature trees and areas of amenity grassland (see photograph 5, Appendix 3).

3.0 DESKTOP STUDY

3.1 Ecological data and records of protected species were requested/gathered from the following sources (Table 1):

Table 1: Desktop Study Sources

Consultee/Source of Information	Information Supplied
NBN Gateway	Bat and bird records within 1 kilometre of the proposed development site.
Greater Manchester Bat Group	Bat records within 1 kilometre of the site

Bat & Bird Records

3.2 Desktop studies revealed no records of bat roosts, Barn Owls or Black Redstart within 1 kilometre of the site.

3.3 A response from the Greater Manchester Bat Group is still awaited.

4.0 LEGISLATIVE AND PLANNING CONTEXT

4.1 This is a brief summary of the ecological planning and legislative context in England. This is general advice only and does not relate specifically to the site being assessed. Specific advice is provided in Sections 7.0 and 8.0.

4.2 Bats

All 16 species of British bat are protected under Schedule 5 of the Wildlife and Countryside Act 1981 and under Regulation 39 of the Conservation (Natural Habitats, &c.) Regulations 1994 (the Habitats Directive). Under this legislation it is an offence to:

- Intentionally kill, injure or capture a bat
- Deliberately disturb bats
- Damage, destroy or obstruct access to roosts (a bat roost is defined as any structure or place which is used for shelter or protection, whether or not bats are present)

The potential fine for each offence is £5,000. If more than one bat is involved, the fine is £5,000 per bat. An offender can also be imprisoned for up to six months. Defences exist within the legislation should an offence occur as the result of an otherwise legal operation and could not have been reasonably avoided.

The UK BAP lists six bat species considered as priorities: barbastelle, Bechsteins, greater mouse-eared bat, pipistrelles (common and soprano), greater horseshoe and lesser horseshoe.

Where bats are found to occur on a development site, and there is considered to be a reasonable possibility that a roost may be damaged or destroyed or that bats using a roost will be disturbed, a licence must be obtained from the Department of the Environment, Food and Rural Affairs (DEFRA).

4.3 Barn Owls

All birds, their nests and eggs are protected by law under Part 1 of the Wildlife and Countryside Act 1981 (as amended). Barns Owls are afforded special protection through inclusion in Schedule 1 of the Act.

Under the legislation it is an offence to:

- Intentionally kill, injure, or take (handle) any wild barn owl.
- Intentionally take, damage or destroy any wild barn owl nest whilst it is in use or being 'built' (barn owls do not 'build' a nest but may make a nest scrape).
- Intentionally take or destroy any wild barn owl egg.
- Possess or control a wild barn owl (dead or alive), or egg, (unless it can be shown that it was obtained legally).

- Intentionally or recklessly disturb any wild barn owl whilst 'building' a nest or whilst in, on or near a nest containing eggs or young.
- Intentionally or recklessly disturb any dependent young of wild barn owls.

The potential fine for each offence is £5,000. If more than one bat is involved, the fine is £5,000 per bat. An offender can also be imprisoned for six months. Defences exist within the legislation should an offence occur as the result of an otherwise legal operation and could not have been reasonably avoided. Disturbance may be deemed reckless if it is committed by someone who could be expected to know that the bird(s) might be present but failed to check.

4.4 Black Redstart

The black redstart (*Phoenicurus ochruros*) is listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). This protects the bird, its eggs and nestlings from killing, injury, and damage or destruction to its nest. Importantly, the Act also protects any intentional disturbance to the bird while it is building its nest, or is in, on or near a nest containing eggs or young, or disturbance of the dependent young of such a bird. The black redstart is also listed as a Species of Conservation Concern on the UK Biodiversity Action Plan (1995). It is also listed in the Red Data Book of Birds, and in Appendix II of the Bonn Convention on the Conservation of Migratory Species of Wild Animals (Black Redstart working group).

4.5 Birds

On a general note, virtually all species of bird are protected while on the nest. Whilst a lawful development is allowed to disturb birds it is considered good practice to undertake any works that could affect nesting birds, e.g. tree felling, vegetation removal, mowing of areas used by ground nesters, outside the bird breeding season (March to August inclusive). This may be included as a condition of the planning permission.

5.0 BAT SURVEY METHODS

5.1 A bat scoping survey was undertaken by Joseph Whittick BSc (Hons.) AIEEM on the 8th January 2008. Conditions were fair.

5.2 Joseph Whittick is an experienced bat surveyor. Experience includes:
- volunteer with the Greater Manchester Bat Group (GMBG) for three years
- over 200 hours survey experience
- treasurer of the GMBG.
- attendance of the three day "Bat Survey and Mitigation for Ecological Consultants" course run by the Bat Conservation Trust (BCT)
- involvement in numerous mitigation and monitoring programmes

Bat Scoping Survey

5.3 During the daytime scoping the building was inspected on the interior and exterior for evidence of past or present usage by bats and its suitability as a bat roost including:

- droppings
- feeding remains (e.g. moth and butterfly wings)
- potential roosting sites
- potential entrance points
- discolouration around entrance points
- absence of cobwebs in potential roosting points

Particular attention was paid to the ridge line and gable ends which are favoured roosting sites. A high powered torch (1,000,000 candles) and an endoscope (ProVision 300) were used to aid in the survey.

6.0 BIRD SURVEY METHODS

6.1 A bird survey was undertaken by Joseph Whittick BSc (Hons.) AIEEM on the 8th January 2008 in conjunction with the bat survey.

6.2 The building was inspected on the interior and exterior for evidence of past or present usage by Barns Owls (*Tyto alba*) and its suitability as a nesting site for this species including:

- Droppings (white vertical streaks on roof beams and large white splashes on floors)
- Pellets. Barn owls generally swallow there prey whole and regurgitate the indigestible parts (bones, fur etc.) as pellets. The colour and condition of pellets can give an indication as to when a site was last used by barn owls.
- Feathers. Barn owl nestlings begin their initial moult at 11 months. Adult barn owls tend to shed their largest and most noticeable feathers (wing feathers) in the summer.
- Nest debris. Barn owls do not build nests but nesting areas may contain nestling fluff and pellet debris.
- Potential entrance points. The minimum entrance hole size required for barn owls to gain access to a building is 7cm by 7cm.
- Suitable nesting platforms. Barn owls need a level area to lay there eggs usually over 3 metres in length and over 3 metres off the ground. Typical nesting places include tops of walls, between bales and attic floors. As the survey was undertaken outside of the main nesting season (March to August) potential nesting places could be inspected with limited risk of disturbing nesting barn owls.

A high powered torch (1,000,000 candles) and binoculars were used to aid in the survey.

6.3 Black Redstart habitat was assessed by searching for areas of rubble, sparse vegetation, tall buildings suitable as singing posts and cracks and crevices for nesting.

6.4 The surveys were conducted in January which is outside the season for bat maternity colonies to be present and too early in the year for surveying for breeding Black Redstarts.

6.5 Evidence of other nesting birds was also searched for during the survey.

7.0 SURVEY RESULTS

Bat Survey

7.1 No evidence of roosting bats was identified in the building at the time of survey. No droppings or feeding remains were identified on floors or stuck to walls.

7.2 No evidence of bat activity, e.g. droppings, was identified on the exterior of the building however given that the survey was undertaken during the hibernation period for these species it is likely that evidence of bats from the previous year would no longer be present due to the actions of wind and rain.

7.3 Access was available to the main areas of the building however the loft space above the offices in the northern section could not be fully accessed as the roof timbers are unsafe.

7.4 Small areas inaccessible for inspection are located throughout the building. A space is present between the roof boards/timber cladding and the roofing slates and there is potential for bats species, particularly crevice dwellers such as the Pipistrelle, to roost in these areas. The hanging tiles on the sides of the dormers windows and some roof tiles also have gaps beneath which could be used as roosting sites by crevice dwelling species. Gaps beneath the roof tiles and flashings also provide access to the space between the tiles and the boards mentioned earlier. Access for bats is also available to the top of the southern gable wall and there is potential for bats to roost in this area. Additional small crevices suitable as roosting sites are located throughout the building.

7.5 The site is located immediately adjacent to Whitworth Park which offers suitable foraging habitat for bat species.

Barn Owl Survey

7.6 No evidence of Barn owl usage was identified on site. Suitable nesting platform are present in the building however the site is located in an urban area with no suitable Barn owl foraging habitat nearby.

Black Redstart

7.7 No evidence of Black Redstarts was identified during the course of the survey, however the survey was undertaken outside of the nesting season.

7.8 A small area of sparse vegetation is located adjacent to the southern wall of the building (see photograph 6, Appendix 2). This brownfield area offers suitable foraging habitat for Black Redstart whilst the adjacent wall could be used as a nesting site for this species. Taller buildings suitable as singing posts are located in the immediate area.

Birds

7.9 Pigeons are nesting within the building. No evidence of other nesting birds (e.g. old nests) was identified in the building at the time of survey.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 **Bats**

No evidence of bat usage was identified on site at the time of survey. No bat droppings were identified on floors or stuck to walls. The loft space of the northern section of the building could not however be fully accessed. Suitable roosting sites are located beneath hanging tiles on the exterior of the building and the gaps between the roofing tiles and the interior boarding. Bats roosting in these areas would most likely go undetected during a daytime survey. Habitats adjacent to the site, particularly Whitworth Park, have suitability as foraging areas for bats increasing the potential for bats to be roosting in the building.

In order to rule out the possibility of bats roosting within the building an activity survey at dusk or dawn is thought to be required. These surveys can only be undertaken form late May to early September and are designed to identify bats entering or leaving parts of the building that can otherwise not be accessed for survey. The activity survey should serve to determine whether significant numbers of bats are roosting on site. Single or small numbers of bats may also transiently roost in places on an occasional basis and go undetected during the activity surveys, it is therefore recommended that even if bats are not detected during the activity demolition should be undertaken in a controlled manner with features suitable as roosting sites, e.g. ridge tiles, roof tiles and flashings, being removed carefully by hand. If any bats or evidence of bat occupation are found all work should cease immediately and a licensed bat worker should be contacted.

Regardless of the presence/absence of bats on site given the suitability of adjacent habitats for bats the incorporation of bat boxes or bat tubes on the new building would be desirable. This would aid in improving the favourable conservation status of these species in the area.

8.2 **Barn Owls**

No evidence of Barn owl usage was identified on site. No issues are thought to exist with regards to this species.

8.3 **Black Redstart**

No evidence of Black Redstarts was identified on site at the time of survey however the survey was undertaken outside of the nesting season. The southern wall of the building and the adjacent area of wasteland have suitability as nesting and foraging habitat for this species and there is potential for Black Restarts to nest here in the summer. Additional dawn surveys to identify singing birds would be required to determine the presence/absence of this species on site. These surveys can only be undertaken from May to August (the nesting season).

8.4 **Birds**

No evidence of nesting birds, with the exception of Pigeons, was identified on site at the time of survey. If works are to begin during the bird breeding season (March through August inclusive) a recheck of the building immediately prior to the start of works is recommended to ensure that no birds are nesting. If birds are found to be nesting the nest should not be disturbed until nesting is complete and young birds have fledged.

THESE SURVEY RESULTS ARE VALID FOR UP TO 1 YEAR AFTER WHICH RE-SURVEYS ARE RECOMMENDED

9.0 REFERENCE

Mitchell-Jones, A.J, & McLeish, A.P. Ed. 2004. *Bat Workers Manual*

English Nature 2004. *Bat Mitigation Guidelines.*

The State of the UK's Bats. Summary report from the National Bat Monitoring Programme. National Bat Monitoring Programme. March 2006

The Black Redstart working group sponsored by English Nature, London Development Agency, Nigel Upchurch Associates, Enfield Council, Lewisham, Argent St George. www.blackredstarts.org.uk

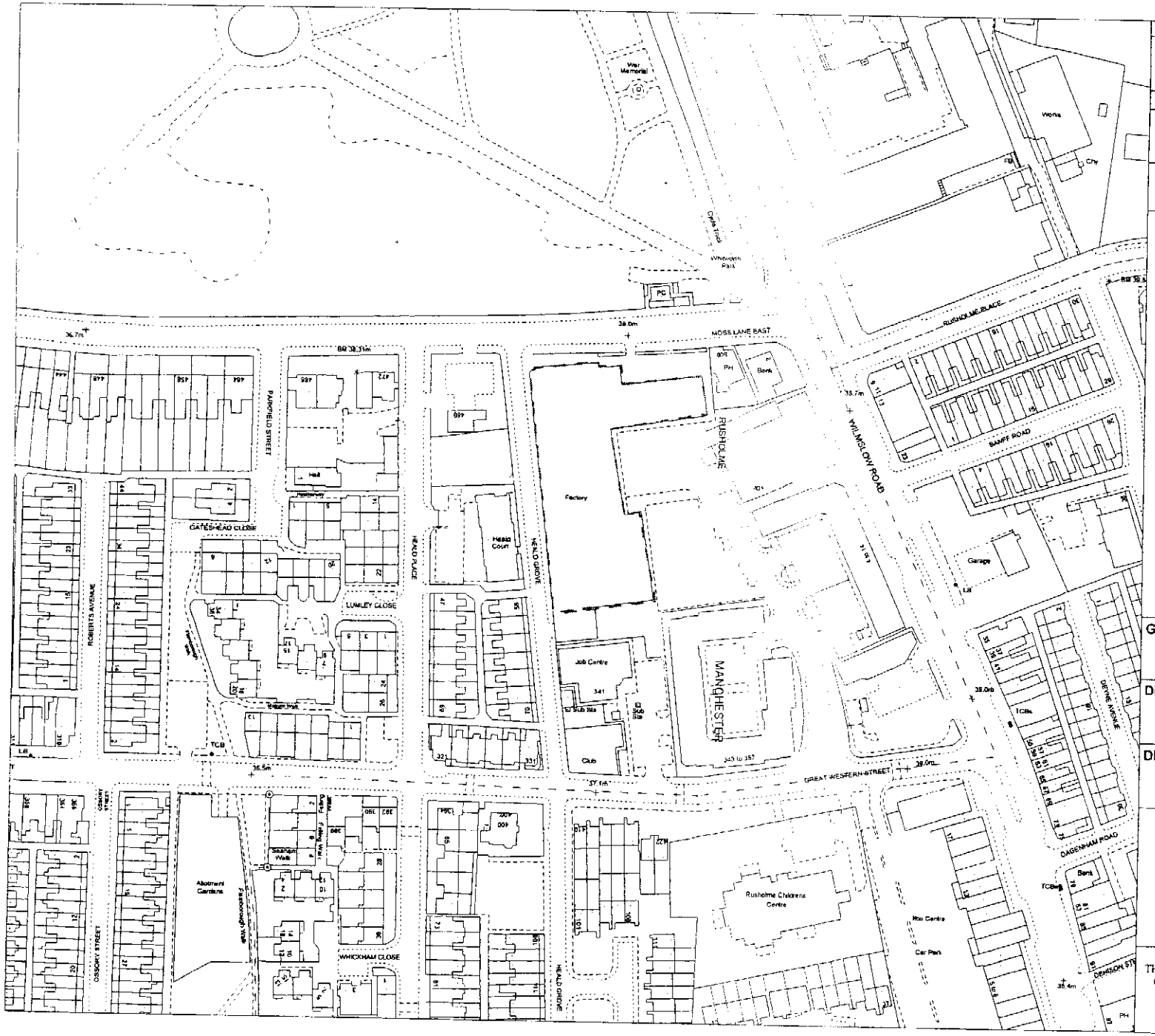
English Nature 2002. *Barn Owls On Site - A Guide for Developers and Planners.*

Barn Owl Trust. Leaflet No.22. *Barn Conversions*

APPENDIX 1

Drawings:

D/JWE/281/001 – Site Location Plan



J W ECOLOGICAL LTD

Site: Moss Lane East

Title: Site Location & Environmental Designations

KEY:

- Site of Special Scientific Interest (SSSI)
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Ramsar Site
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)
- Area of Outstanding Natural Beauty (AONB)
- Ancient Woodland
- Site of Biological Importance (SBI)
- Building under survey

GRID REFERENCE:		SCALE:
SJ 84955 95631		1:5000
DRAWN BY:	**CHECKED BY:**	**DATE:**
JW	JM	09/01/08
DRAWING NUMBER:		**ISSUE:**
D/JWE/281/001		A

COPYRIGHT ACKNOWLEDGEMENT

THIS PLAN IS BASED UPON THE ORDNANCE SURVEY MAP BY J W ECOLOGICAL SERVICES WITH THE SANCTION OF THE CONTROLLER OF H.M. STATIONERY OFFICE.

CROWN COPYRIGHT RESERVED.
UNAUTHORISED REPRODUCTION INFRINGES COPYRIGHT.

THIS PLAN IS ISSUED BY J W ECOLOGICAL SERVICES SUBJECT TO THE CONDITION THAT IT IS NOT COPIED EITHER IN WHOLE OR IN PART OR DISCLOSED TO THIRD PARTIES UNLESS PRIOR WRITTEN AUTHORISATION IS GIVEN.

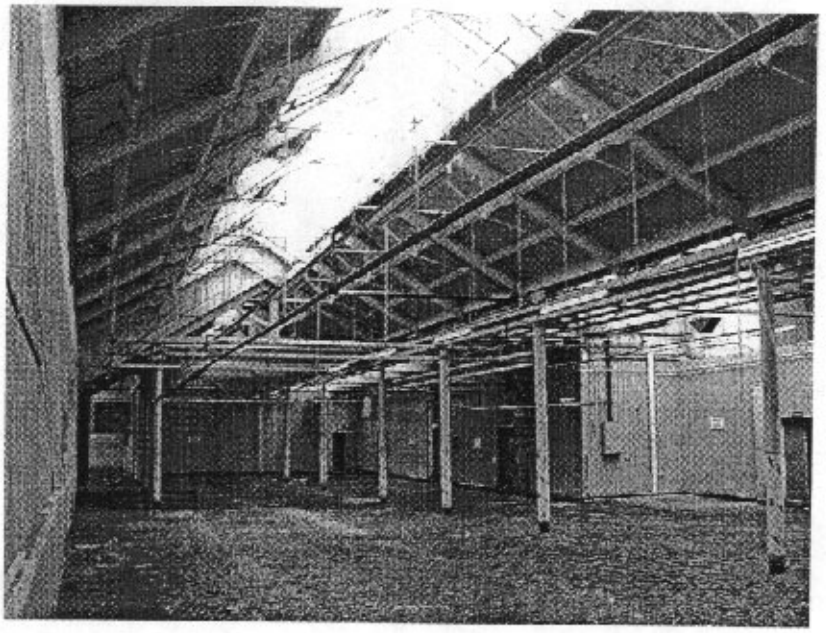
APPENDIX 2

Photographs

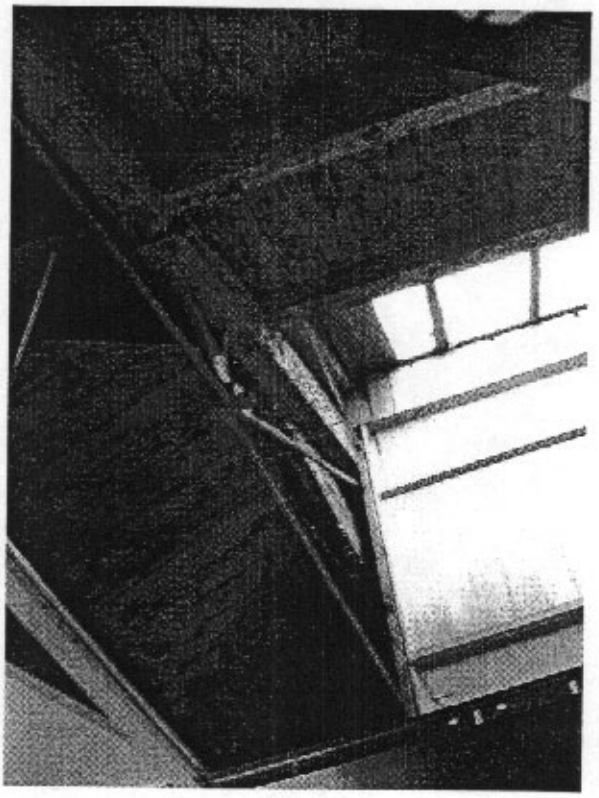
Photograph 1 – Factory building frontage



Photograph 2 – Large open area on interior



Photograph 3 – Loft space of office area at northern end of building



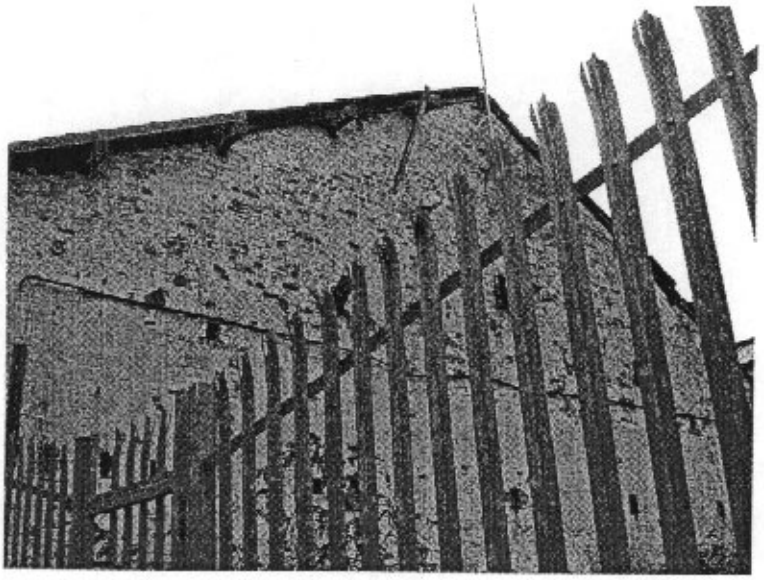
Photograph 4 – Flat-roofed extension on eastern face of building



Photograph 5 – Whitworth Park to north of site



Photograph 6 – Southern wall of building with adjacent area of wasteland



11.06 Site Desk Study Scott Hughes Design

(bound separately)

11.07 Crime Impact Statement GM Police

CRIME IMPACT STATEMENT

Prepared by G.M.P. Architectural Liaison Unit

Project Reference:	1644/2007
Project Title:	MOSS LANE EAST RUSHOLME MANCHESTER
Name of Consultee:	HODDER ASSOCIATES MANCHESTER
Date:	24TH JAN 2008 (revised 08/02/2008)

Part A – Crime Impact Assessment



Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

1. Location of Proposed Development

General Description of Site & Surrounding Area

The 'L' shaped site lies on the site of an existing red-brick municipal building to the south of Moss Lane East. The new structure will overlook Whitworth Park, a large and pleasant, very popular green space in the heart of a busy residential and commercial sector to the south of Manchester City centre. The area has a high population of university students and supports a large Hospital complex many building still under construction. This is an area with vitality supporting numerous popular ethnic restaurants. The student population is young and naïve and street robberies are high owing to the 'easy target'.

To the east of the proposed site is a public house with Healed Grove lying on the western boundary. Heald Grove unfortunately supports a few derelict buildings but also refurbished properties should enhance this new development which in turn will be a vital improvement to the area.

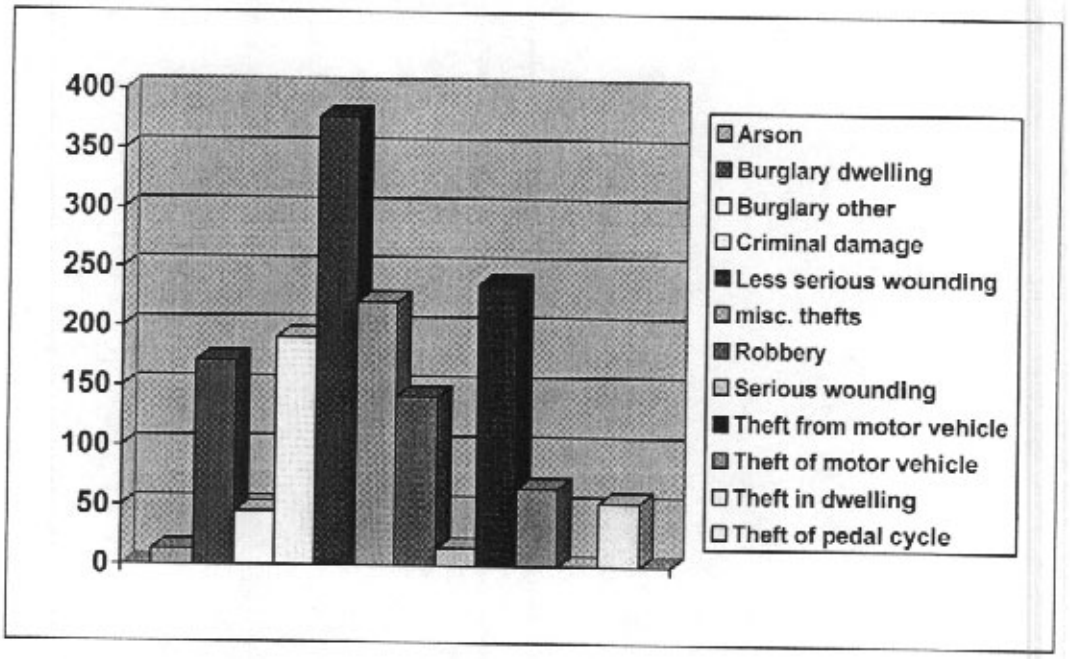
To the Moss Lane East frontage of the site a (busy) bus stop is sited in the wide pavement. The impact of this site upon a new development may be adverse, as persons congregating in a large group could conceal a person intent on accessing the new premises illegally.

Crime Pattern Analysis (CPA): Crime Profile

The assessment of crime within the last 12 months which includes an area on a 1000 square metre grid superimposed on this location has identified a low level of crime. During the period December 2006 - to December 2007, 1531 crimes (excluding incidents) were recorded. The following crime types represent the greatest volume of crime –

- Less serious wounding - 377 – local violent culture – licensed premises and late night drinking will encourage this behaviuor
- Theft from vehicles - 236 - high volume of, on-street parking in the locality. No reasonable in cartilage parking arrangements. – Commuters park cars on street.
- Theft of motor vehicles - 66 – remote areas which has a low footfall and
- Criminal damage: - 191 – vandalism and anti-social behaviour is high – many derelict buildings will encourage abuse.

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)



On Moss Lane East 374 incidents occurred in the last 12 months of which anti-social-behaviour (ASB) is the most prolific and street robberies are high. Alcohol related incidents are also high. Similarly the short road of Heald Grove experienced 89 incidents during the same period where vehicle related crime dominated, mainly due to dense day time parking along the road.

2. Vulnerable Location Index (VLI)

Vulnerable Localities Index (VLI): - (The scoring of this index draws together 6 areas of data which has an impact on crime – Burglary; Criminal damage; Income deprivation; Employment deprivation; Educational Attainment; Percentage of young people in the area.)

The VLI for this area:- is above average for the Greater Manchester area: This location is on the periphery of the Hollinwood housing estate and to the north a mixed use of residential and commercial properties. The motorway to the south is a potential conduit for crime with easy access to Victoria Avenue and Greengate.

Our records illustrate, that in this location, the result of high night time activity and vulnerable student population coupled with high-density student accommodation the extent of ASB and street robbery is not too surprising.

The provision of a controlled and potentially secure parking facility should help to reduce the vehicle crime levels in this location.

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

Divisional Crime Reduction Adviser's (CRA) comments

This is a significantly high key crime area, - TFMV, Robbery, burglary all feature (a major hotspot which are high figures for the force) There is a high volume of students residing in the area.

Whitworth Park has ongoing crime problems and is adjacent to this area. CCTV coverage is located on the Oxford Road area. Unfortunately, it does not cover a significant area of Moss Lane. Within the residential areas locally, there are many ungated alleyways used as access and escape routes

Proposed Building Type/Use

General Risk Assessment

The development when completed will form a multi-use complex over 7 floors of predominantly residential units with 730 square metres of retail space to the ground floor of the east wing on Moss Lane East. The entrances to the 148 apartments will be located on Moss Lane East and Heald Grove, with Heald Grove supporting the entrance to the undercroft parking.

It should be noted that all buildings and sites to a greater or lesser extent are susceptible to crime and the following are examples of the opportunity for acts of crime to be committed.
Commercial/ / Retail/ Premises

- Cash robbery
- Parked cars
    - Theft of cars
    - Theft of contents and components from cars
    - Damage to cars
    - Attacks on cars
- Wilful damage
- Graffiti
- Attacks upon & violence to staff
- Employee crime
- unauthorised access to service areas
- the potential for personal attack to pedestrians and staff on and around the complex.
- thefts from the person
- possible attacks to vital services i.e. electricity cables, telephone junction boxes etc.

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

- possible attacks on computer equipment resulting in loss of business records etc.
- Potential acts of vandalism and/or graffiti to the premises and its surrounding facilities
- Acts of theft and criminal damage during the construction period
- Burglary to premises.
- Theft of and from vehicles owned by staff, visitors and the public.
- The possibility of walk in thefts.
- The potential for arson attacks to the premises and surrounding facilities.
- Thefts from the person.
- The potential for incidences of "ram raiding" to the premises

The residential premises must also be addressed.

Residential & General Crime Concerns:-

- theft of and from vehicles owned by residents, visitors and the public.
- acts of theft and criminal damage during the construction period
- tailgating into premises and car parking facilities.
- Unauthorised access to the common areas of the apartment block with access to internal locations.

The apartments to the building are appropriately raised above ground (pavement) level thus raising the low cills of the ground floor apartments to a height of approx. 1500mm. The lower panels to the window inserts should be opaque and robust to maximize privacy and nuisance and vandalism.

The recessed apartment entrance off Heald Grove is wide and visible. The entrance from Moss Lane East is potentially vulnerable with the entrance door screen set in a recess. The ground floor apartment corner adjacent to the entrance door shall be modeled to omit the recess OR the pavement designed to inhibit persons standing against the wall of the entrance recess.

Site Specific Risk Assessment

Most issues have been determined above – other matters include:-

- Misuse of access to private areas – e.g. cycle store
- Rear of buildings – vulnerable spaces
- Tailgating by cars illegally accessing the car park in order to steal cars and their contents or attack persons in the confined space of the car park.

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

- The building fabric should be robust & inhibit persons accessing the buildings
- During the hours of opening of the retail premises a security/ reception presence should be maintained.
- The provision of CCTV overtly located on site may act as a crime deterrent and provide a valuable record in the event of an incident during the day or night.
- This location adjacent to Whitworth Park has seen violent and abusive attacks upon persons. Crime in the area is unacceptable and we will be requiring very robust measures to minimise crime impacting upon the residents and visitors to the building.
- The location of the bus stop outside the main entrance to the apartments is not appropriate.

CONSTRUCTION SITE SECURITY

Prior to discussing security provisions for the completed building it is first necessary to consider the security of the site during the construction process. Incidences of crime during this period can have serious effects not only due to contractual delays, but also in terms of costs and staff morale.

Close liaison should be encouraged between site staff and the local police. The divisional Crime Reduction Advisor (Mrs. Judith Hackney 0161 856 4314) will be able to provide advice on specific areas of site security. Consideration should be given to perimeter protection; control of access to and from the site; staff identification; on site security personnel; secure storage of both construction equipment and building components; property marking etc.

Part B – Crime Prevention Recommendations

The following issues are expressed in the text below: -

1. **Design, Layout & Spatial Relationships**
2. **Physical Target Hardening**
3. **Processes & Procedures**

Crime Prevention Recommendations

1. The following comments take into account Design, layout and spatial relationship of the building(s) and their environs: Physical target hardening recommendations:

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

Enhanced management systems and processes: Specific Secured By Design requirements.

2. Many issues have been defined in part 1 of this statement and request those observations are incorporated into the scheme.
3. The scheme should be designed to the minimum standards of the Secured By Design award (SBD).
4. We believe the site perimeter and the relationship of the buildings offer good sight lines, which will enhance natural surveillance.

Site Perimeter Security

5. The rear of the property is potentially vulnerable and must incorporate a robust boundary. This should be visually impermeable. The rear boundary wall to the private garden area should be not less than 2.4m high.
6. The apartment building is raised on a 'podium' offering an inherent advantage to privacy and nuisance behaviour. Where the building is recessed at (upper) ground level – along Heald Grove, railings should be incorporated on the raised areas to prohibit persons accessing the raised areas. I will require sight of this detail. The building lies on back of pavement to Heald Grove and Moss Lane East. Where access is not required to door entrances etc, anti - pedestrian (tactile) paving must be adopted to inhibit persons getting close to the apartment building.

Access Control – Commercial Premises

7. A security provision/ strategy should be established during the opening hours/ period of the business to act as a capable guardian in order to minimise the risk and impact of crime.
8. The central rear service access door to the retail units is unfortunate. I require consideration of a dedicated access to the service areas of the retail units to be located opposite the gated entry i.e. northeast corner of site. Access to the private residential rear garden from the service access is not acceptable.

Access Control – Residential Block

9. The monitoring of access to and from the site is of paramount importance within a comprehensive security regime.
10. All persons visiting the building should be required to be stopped at the main entrance

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

11. Unrestricted access provides good opportunity for persons to arrive unhindered at the premises especially during "rush hour" periods of time. This provides the opportunity for unauthorised callers to easily enter the premises.
12. A robust access control strategy is essential to the residential building adopting an audio-visual/ access control contact with visual monitoring exclusively located on the handset in each individual apartment. We advise appropriate products and methods will be discussed with the Architectural Liaison Unit (ALU) during the detail design stage.

Undercroft Car park

13. Access to the car park must be strictly controlled. I will require the car park be controlled by a 'air-lock' strategy, i.e. no more than one vehicle may enter the ramp at the same time. The entrance will require two doors - potentially roller shutter grills (to LPS 1175 SR3 enhanced security standard) – at the top and bottom of the ramp. The shutter must operate with a rapid rise and fall and be operated by infra-red or radio-control device, from an authorised user.
14. The access doors from the car park to the three stairways MUST incorporate access control measures (e.g. proximity reader) and be linked to the authorised entry into the car park entrance of Heald Grove.
15. Similarly, the two lift cars MUST incorporate dedicated access control to the lift doors.
16. The car park must meet with the standards of the Safer Parking Scheme (SBD family). This will include levels of lighting; flow direction signage; information signage; telephone contacts and help points etc. Please consult with the ALO regarding this matter.

Building Shell

17. Vehicular attack to the building is a low risk concern but must be considered a possible threat.
18. As well as considering the external environment around the proposed development it is also necessary to examine the physical fabric of the building in order to prevent potential offenders exposing the construction of the building shell to their advantage.
19. Personnel doors should be enhanced to meet LPS 1175 SR3 standards.
20. All locking devices not incorporated into PAS 024 or LPS doors should be a minimum of five lever mortised deadlocks to British Standard 5489.

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

21. Security bolts should additionally be positioned on certain doors.
22. Externally opening doors should incorporate hinge bolts.
23. Fire exits should be used solely for that purpose. We prefer fire exit doors are permanently locked with release-open or fail safe open in the event of a fire. In any event the doors should be alarmed to a central monitoring point(s), i.e.. reception area or security control desk.
24. All glazing to accessible windows and doors (from ground level), shall be laminated (minimum thickness 7.5mm)
25. Rainwater outlets and other vertical stacks should be positioned internally or have anti-climb devices fitted to deter persons climbing to upper levels of premises or accessible upper floor windows.
26. All vital services to premises, including gas, electricity and telephone cables should be physically protected to resist attack. All proposed junction boxes, access chambers etc. should be positioned either where they are well overlooked or be provided with additional protection to prevent unauthorised access.

Lighting

27. In order to provide opportunities for surveillance, and in a bid to alleviate the fear of crime, it will be necessary to consider appropriate lighting proposals. It should also be noted that lighting activated by movement detectors can make persons aware of others presence, especially in areas which have restricted access.
28. Lighting sources should be positioned high on the building and to enable an appropriate spread of light.
29. Compact Fluorescents or Metal Halide lighting should be considered as standard to give a good quality of light, which also provides accurate colour rendition where CCTV is employed. High-pressure sodium lights as described in the lighting drgs. should be avoided.
30. Lighting shall provide illumination to pedestrian footpaths, car parking areas, and entrances to the site, together with the perimeter shell of the building.
31. All lights should incorporate anti-vandal properties. Vandal resistant fittings of polycarbonate armour plate glass and/or metal grilles should be used to limit damage and prolong their effective use.
32. All wiring to lighting should be encased to prevent attack, where possible.
33. Light coloured surface finishes particularly to the undercroft parking, could help to ensure a higher level of lighting to the properties in and around the proposed development.

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

Closed Circuit Television

34. An appropriate Closed circuit television system is strongly recommended around the site. A well-positioned, well-monitored closed circuit television centre can provide enormous benefits.
35. Well-positioned cameras can more effectively protect areas of limited natural surveillance. Internally a system can employ the use of covert cameras to cover more isolated areas and monitor persons as they move through remote parts of the building.
36. Any system could employ movement detectors to some of the cameras. This facility enables the cameras to be automatically positioned to areas where movement has been detected, and in some cases, this can alert the system to go "live", and/or issue an audible warning activate lighting etc. It should be noted that movement detectors are primarily designed to cover areas, which are void of pedestrians and/or other traffic.

37. A C.C.T.V. system provides maximum benefit when security staff continually monitors it. Types of cameras, positions, methods of signaling, lighting levels, monitors etc. must be further assessed and we would require this be a condition of the planning approval.

General And Secured By Design (SBD)

38. The following issues are included in order to cover any particular "weak spots" in the security proposals for the development. We will require consideration of the following: -
39. The location of the bus stop outside the main entrance to the apartments is not appropriate. The impact of this site upon the new development will likely be adverse, as any person in a group in the pretext of waiting for a bus could be intent on accessing the new premises illegally. I will require the bus stop to be relocated some 10 metres or so from the entrance to the apartments.

40. All new windows to ground floors shall be BS 7950 or certified to LPS 1175 SR2. All ground level glazing to apartments shall be not less than 7.5mm laminated glass. Glazing to the retail units shall be not less than 9.5mm laminated glass.

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

41. Doors:- Entry doors to the apartments and front entrance doors shall be PAS 024 or certificated to the Loss Prevention Certification Board standard LPS 1175 Security Rating 3. Fire doors should also comply with this standard (exclude any external ironmongery to fire doors).
42. Main entrance doors to the apartments MUST incorporate an audio-visual access control facility with each apartment supporting an intercom response and a small monitor screen as part of the interface (not on a TV channel). The main entrance door can be remotely unlocked from an apartment. The entrance door shall incorporate robust electronic/ magnetic ironmongery to resist not less than 1500kg pressure
43. Locks within door-sets to individual apartments and main entrance doors shall meet the following specification:-
    a. A cylinder certified to BS EN 1303 grade 5 key security and grade 2 attack resistance (by drill). This is a requirement for door-sets utilising multi-point locking systems.
    b. A lock certified to BS 3621:2004 or BS 8621:2004.
    c. Individual apartment doors must be openable from the outside by key only – i.e. the apartment door must lock shut automatically when closing. A single lever handle operation internally will be required. Apartment doors should be multi-locking with at least three lock mechanisms.
44. The installation of a secure alarm system is important to monitor unauthorised access to the property. Alternatively each apartment shall be fitted with a dedicated electric spur connection for residents own internal security system.

45. In order to reduce opportunities for potential arson attacks it is important to remove all waste material from the development as quickly as possible. The waste material store should be effectively enclosed within a secure storage area.

46. Use of signage is also important in preventing unauthorised access in and around the development. We would advise that adequate signage is deployed in all areas not only to direct people throughout the premises, but also importantly to deter persons entering unauthorised areas.

47. Access to the car park must be strictly controlled

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

48. The car park must meet with the standards of the Safer Parking Scheme (SBD family). This will include levels of lighting; flow direction signage; information signage; telephone contacts and help points etc.

The above measures have been described in order to meet the Secured By Design (SBD) award standards. In order to ensure the issues expressed are adopted into a security strategy we request the above issues are addressed and conditioned in any planning approval.

If the above measures are adopted we believe the scheme could achieve the SBD award (subject to a final site visit).

PLEASE NOTE - In the event of any subsequent material changes to the scheme, it will be necessary for the Architectural Liaison Unit to reassess the comments made above.

John Magrath
Architectural Liaison Officer
Divisional And Partnership Support Unit
house/07/manc/1644/07/moss1 -cis final

28/01/2008

Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S. West PDO), Chester House, Boyer Street, Manchester M16 0RE, Tel: +44(0)161 856 5912, Fax: +44(0)161 856 7489, E-mail: architecturalliaisonunit@gmp.police.uk
Website: www.gmp.police.uk (ALU under 'Crime Prevention' tab)

11.08 BREEAM Statement Scott Hughes