Airborne Environmental Consultants Ltd

REFURBISHMENT & DEMOLITION ASBESTOS SURVEY REPORT TO SPECIFIED AREAS OF CREWE CEMETERY BADGER AVENUE CREWE CHESHIRE CW1 2NA

SEPTEMBER 2014

This survey was commissioned specifically for the above project and the level of intrusiveness is dependent on the proposed refurbishment.

UKAS INSPECTION
232

AEC are UKAS accredited for surveying and hold the Type C UKAS inspection no. - 232

Report prepared for:	**Cheshire East Council (Delamere House)** **Asset Management Services** **Delamere House EC** **Delamere Street** **Crewe** **Cheshire** **CW1 2JZ**
Report reference:	**J009734**
Issue date:	**September 2014**
Survey completed by: **Scott Brookes** **Environmental Consultant**	
Approved by: **Chris Frost** **Senior Surveyor**	

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1.0 EXECUTIVE SUMMARY

A refurbishment & demolition asbestos survey of Crewe Cemetery, Badger Avenue, Crewe, Cheshire, CW1 2NA, has been undertaken by AEC, to the methodology outlined in HSE guidance document HSG 264 Asbestos: The survey guide.

This report should be read in its entirety, and not as separate sections only. The building register includes a material risk assessment, with recommendations on treatment of asbestos for this site.

During the survey the following asbestos containing materials have been identified:

- No asbestos containing materials were identified.

It should be presumed that the inaccessible areas detailed in Section 4.0 will contain asbestos and be managed accordingly until such time that the areas can be inspected and proven to be asbestos-free.

2.0 INTRODUCTION AND AEC'S BRIEF

At the request of Peter Shallcross, acting on behalf of Cheshire East Council (Delamere House), Airborne Environmental Consultants Limited (AEC) have carried out a refurbishment & demolition asbestos survey of Crewe Cemetery, Badger Avenue, Crewe, Cheshire, CW1 2NA. This survey was carried out as outlined in HSG 264 Asbestos: The Survey Guide, and our quotation ref: Q010895. This refurbishment & demolition assumes removal of the asbestos within the premises, prior to the refurbishment or demolition of the premises. While the register included the material assessment algorithm, this report does not make recommendations based upon the management of the asbestos identified within the property.

The survey was carried out by Scott Brookes, Rebecca Snowden and site works were completed on the 5th September 2014.

This survey report must be read in conjunction with any other associated AEC / or referenced asbestos survey report(s).

SURVEY PLAN

The exact areas to be surveyed and the survey types requested by the customer to be carried out in these areas are as follows:

Area/building to be surveyed	Survey Type	Areas/installations excluded by customer	Details of scope changed on site by client / tenant
Localised refurbishment & demolition survey to all accessible areas affected by the proposed refurbishment works within the Crewe Cemetery Lodge, as highlighted on the plans in Appendix I.	Refurbishment & demolition	All other areas of the building. It was agreed that all previously identified asbestos containing materials would not be re-sampled, therefore please refer to the latest asbestos management report for full details.	N/A

In addition, several localised areas were identified where the survey team could not obtain full access at the time of survey. These are detailed in Section 4.0.

The methodology associated with this survey is given in Appendix V of this report.

A GUIDE TO THE SURVEY RESULTS

An item number is used throughout this report to relate a sampled, strongly presumed, or presumed asbestos installation to its location on site. When an asbestos installation is sampled it is given a unique laboratory sample number so that the bulk sample can be traceable within AEC's UKAS accredited laboratory. In addition to the laboratory sample number the bulk sample is given an item number, which relates the identified asbestos installation to its location on site. Where a material has not been sampled, but is strongly presumed (typically to be the same as a sampled installation) or presumed (typically if not accessible) to contain asbestos, the material is also given an item number, again relating the installation to its location on site. The item number is used on the item number location plans in Appendix I and in the building register and results in Appendix II to help identify where the asbestos installations are located on site.

Appendix I and Appendix II must be read in conjunction with the rest of this survey report, especially Section 4.0 Inaccessible areas and project specific restrictions and Section 5.0 Recommendations.

The certificate of bulk fibre analysis in Appendix III uses a laboratory sample number to show the result of the analysis carried out on a bulk sample taken on site during the asbestos survey. To relate a laboratory sample number on the certificate of bulk fibre analysis to the building register and results in Appendix II, and thus find the location of the asbestos installation on site, simply look up the laboratory sample number in the building register to obtain its item number or vice versa, if you are reading the building register and results in Appendix II and wish to obtain further details on the analysis carried out on a bulk sample. If you have any concerns about the accuracy of the data, contact AEC in the first instance, as queries may be answered and additional costs prevented.

For a full explanation of the various headings used in the building register and results table see Appendix II.

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232

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3.0 DESK STUDY AND GENERAL BUILDING INFORMATION

As outlined in HSG 264, AEC require relevant information to plan the survey and carry out a desk-top study to review this information. AEC have requested this information and a review of this has been considered, below:

Desk study

Information requested	**Information provided**
Building(s) Type/Address	Crewe Cemetery, Badger Avenue, Crewe, Cheshire
Building description	Main building - Two storey, detached house converted into apartments - Circa - Early 1900s
Usage of site	Commercial
Site conditions	Occupied
Drawings/Plans	Update existing AEC drawings
Information on any previous asbestos removal operations at the site	None

The general NON-ASBESTOS materials used in the structure are described below. Where sampled these will be referred to in the building register and results (see Appendix II).

General building information - Main building

Location	Description
Floors	Concrete to the ground floor overlain with carpet and ceramic tiles, timber to the first floor overlain with a mix of carpet, floor tiles and laminate
Stairs	Timber overlain with carpet, with a lath and plaster underlining, timber panels beneath the banister
Sub floors	None visible
Risers / Service ducts	None visible
Walls external	Brick
Walls internal	A mix of plasterboard, brick and lath and plaster
Ceilings solid	Lath and plaster with a textured coating finish within the bathroom
Ceilings suspended	None
Rainwater goods	Plastic and cast metal
Wastewater goods	Plastic
Plant/Equipment	None visible
Doors/Window frames	Timber doors and frames, a mix of PVC-u and timber sash window frames
Heating systems	Modern wall mounted electric heaters, copper immersion heater water tank
Heating systems - make and model	'Creda Redhead' immersion heater, unknown make of electric wall heater
Roof type	Pyramid hip and flat
Roof materials	A mix of clay tiles and bitumen felt
Insulation - pipes	Sectional foam
Insulation - boilers	Man-made mineral fibre (MMMF) to the water tanks within the loft space, insulating MMMF to the copper immersion heater water tank
Insulation - loft	MMMF insulation
Out buildings	Brick built garage with a clay tile roof and timber soffit and fascia panels, brick built bin store with a clay tile roof and timber fascia panels

Other materials	Ceramic toilet cistern, timber panel to the rear of the electric switch boxes, modern sink pad and kitchen units

4.0 INACCESSIBLE AREAS AND PROJECT SPECIFIC RESTRICTIONS

As this survey is a refurbishment and demolition survey, AEC have placed no specific restrictions on this survey, prior to the survey plan and site discussions. During the survey, however, the following areas were agreed with Peter Shallcross of Cheshire East Council (Delamere House) to be inaccessible:

Although the presence of asbestos in these area(s) is not confirmed, it should be presumed that asbestos could be present and caution should be exercised during demolition or refurbishment works.

If any suspect materials are encountered in these areas it is recommended that works cease until such time that the material can be sampled, analysed and confirmed to be asbestos-free.

The survey was also subject to the following project-specific restrictions:

N.B. All inaccessible rooms within the scope of this survey are identified, with item numbers, on the item location plans (if relevant) and listed individually within the building register.

4.1 Agreed inaccessible areas

- Behind any suspect or sampled installations as these potentialy may contain asbestos.
- No access was gained to the garage and bin store as no key was available from the cementary office at the time of the survey.

4.2 Access limitations

- There were no access limitations.

4.3 Unsafe conditions

- Within any electrical installations as these were considered live at the time of the survey.
- No access gained to external areas above 5m as specialist access equipment would be required.

4.4 Client restrictions

- All other areas of the building. It was agreed that all previously identified asbestos containing materials would not be re-sampled, therefore please refer to the latest asbestos management report for full details..

Please refer to Appendix V for survey methodologies on refurbishment and demolition surveys, which provides further information on this type of survey.

5.0 RECOMMENDATIONS

Recommendations are based upon the product type for removal on a refurbishment & demolition survey, as the HSG 264 material assessment, and a subjective priority risk assessment are not normally required for this type of survey. However, these assessments are considered, as demolition or refurbishment work is not always carried out immediately following the survey, and the CAR 2012 introduces a new tier of work, known as notifiable non-licensed work (NNLW). Work involving either the deterioration of non-licensed products, or work on 'degraded' (i.e. those in a poor condition) non-licensed products are classed as NNLW and the work notified to HSE, hence the condition of the material is considered during this survey. Therefore, recommendations are made based upon the surveyor's knowledge of the occupation of the property during the survey, and any known future usage or planned works. Priority risk assessments are not UKAS accredited, and the algorithm in HSE document 'HSG 227, a comprehensive guide to managing asbestos in premises', is not included in this report.

Please note that the implementation of appropriate remedial measures is a requirement under the Control of Asbestos Regulations 2012 where there is a risk of exposure to asbestos. This will also apply to a refurbishment & demolition surveyed property where the asbestos is not due for immediate removal.

In view of the findings of the survey, and it is known that refurbishment / demolition of the building is planned, the following recommendations are made:

5.1 It is recommended that any identified / presumed asbestos installation(s) are removed prior to the commencement of works.

5.2 It is recommended that if this report is to be used for demolition purposes AEC be employed to revisit the site and investigate behind any previously sampled points post removal, this is to ensure that no ACMs were present behind identified asbestos items.

5.3 It is recommended that AEC be employed to attend site to access any noted inaccessible areas prior to commencement of refurbishment / demolition, particularly where customer restrictions were placed on the survey such as security or weather protection.

5.4 It is recommended that an independent, UKAS-accredited asbestos laboratory be employed to manage the asbestos removal, and where appropriate carry out all visual inspections and air monitoring as outlined in - HSG 248: Asbestos: The analysts' guide for sampling, analysis and clearance procedures'.

5.5 If any areas detailed in Section 4.0 'Inaccessible Areas' are to be accessed or worked upon it is recommended that the areas be subjected to an appropriate survey prior to works commencing. Until that time asbestos should be presumed to be present in these areas.

5.6 It is recommended that, if this report is being relied upon for tendering purposes for refurbishment or demolition works, a suitable contingency sum be included in any such tender to cater for the unlikely event of further asbestos-containing materials being identified within the fabric of the building, or behind identified asbestos installations.

5.7 It is recommended that, if this report is being relied upon for tendering purposes, the amounts of asbestos materials in the building register are approximate estimates only,

from the rooms and locations visited. Sites should be visited to confirm exact amounts. HSG 264 states this type of survey is used to help in the tendering for asbestos removal. This report is not a specification.

5.8 Where asbestos has been identified, AEC have not been able to investigate further behind these installations for safety and legal (potential licensing) reasons, and there is, therefore, a possibility of further ACMs being present behind this material. Should additional ACMs be identified during any subsequent removal of asbestos, the HSE is unlikely to grant a waiver from the required 14-day notification period. Therefore, where programme is critical it is recommended that either a contingency period/sum be allowed in the programme of works or AEC carry out further investigation behind identified ACMs. This will involve working with a licensed asbestos removal contractor, who will construct an enclosure(s) to allow safe access behind identified ACMs. However, this will involve additional time and cost which has not been allowed for in this survey. It should also be noted that localised access enclosures may also not reveal the full extent of sporadic asbestos installations such as packing boards etc.

5.9 It is recommended that the client downloads a copy of HSG 264 Asbestos: The survey guide from the HSE website www.hse.gov.uk to reference with this report.

N.B.

1. It is a requirement of the Control of Asbestos Regulations 2012 to use licensed asbestos removal contractors for all significant work with asbestos sprayed coatings, asbestos insulation/lagging, asbestos insulating board (AIB) and any form of asbestos installed in an insulation capacity. This work requires a 14-day notification period to HSE or Local Authority (depending on type of premises) prior to commencement of works. Further to this, it as a requirement of the Control of Asbestos Regulations 2012 that work involving either the deterioration of non-licensed products, or work on ‘degraded’ (i.e. those in a poor condition) non-licensed products be classed as notifiable non-licensed work (NNLW) and the work be notified to HSE. Licensed asbestos removal contractors are not legally required for work with lower risk asbestos products such as asbestos cement, bitumen products, vinyl flooring products, textured coatings etc, or for NNLW work. However, in **ALL** instances of work with asbestos the requirements of the Control of Asbestos Regulations 2012 will apply and appropriate assessments, plans of work, controls, PPE/RPE and training will be required. For this reason AEC normally recommend that a licensed asbestos removal contractor be used for **ALL** asbestos related works as they should have the appropriate training, competence and equipment to undertake these works to an acceptable standard.

2. It is a requirement of Regulation 4 of the Control of Asbestos Regulations 2012 that all remedial actions be carried out. Following this, the implementation of a management plan should be carried out, including periodic re-inspection of all identified ACMs on a 6 to 12 monthly basis. This should be considered until such a time as all the ACMs have been removed as part of the refurbishment works, or up until demolition. Any ACMs remaining unaffected by refurbishment must be subject to ongoing management.

3. In cases of emergency where the uncontrolled release of asbestos is suspected, AEC can offer an independent analytical consultancy service for items such as initial advice, sampling, air monitoring and subsequent management of licensed contractors for any make-safe/removal work that may be found to be necessary (AEC hold a list of nationwide licensed contractors).

   AEC contact details are as follows:

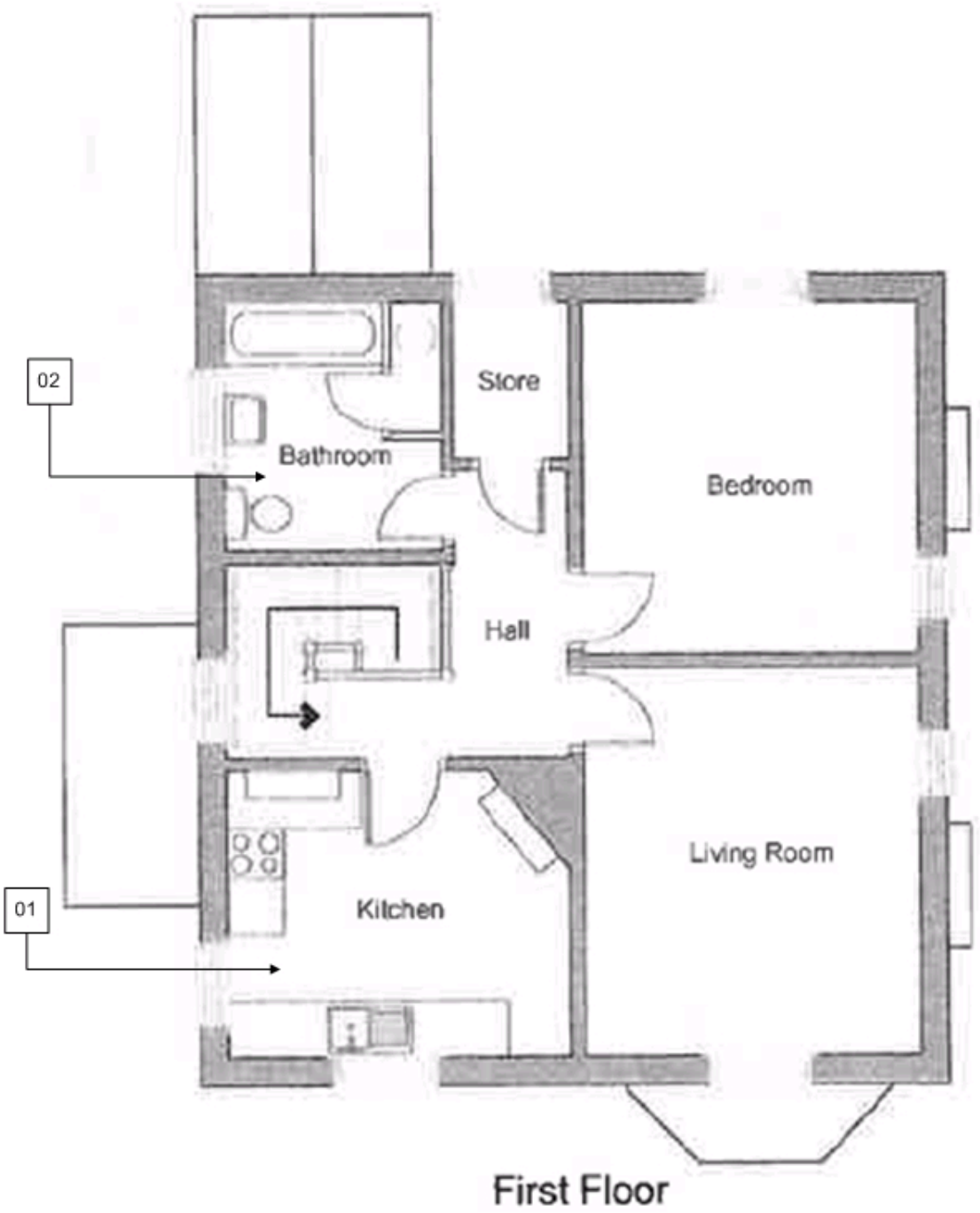
Airborne Environmental Consultants
23 Wheelforge Way
Ashburton Point
Trafford Park
Manchester
M17 1EH

Telephone: 0161 872 7111
Fax: 0161 872 7112

APPENDIX I

ITEM NUMBER LOCATION PLANS

Item locations can be determined by cross-referencing the drawings in this appendix with Sections 4.0 and 5.0 of the report



KEY

: Item Number (WHITE)

: Denotes locations where asbestos may be present. Refer to building register for details (YELLOW)

: No access (BLACK – DIAGONAL)

: Limitations of survey (PINK OUTLINE)

Please ensure that you view this plan in conjunction with the building register and relevant sections within the report, for full details of asbestos containing materials.

Figure 1 - Main building - First floor

Item number locations and extent of identified asbestos products NOT TO SCALE.

Cheshire East Council

PROJECT REF: J009734

aec
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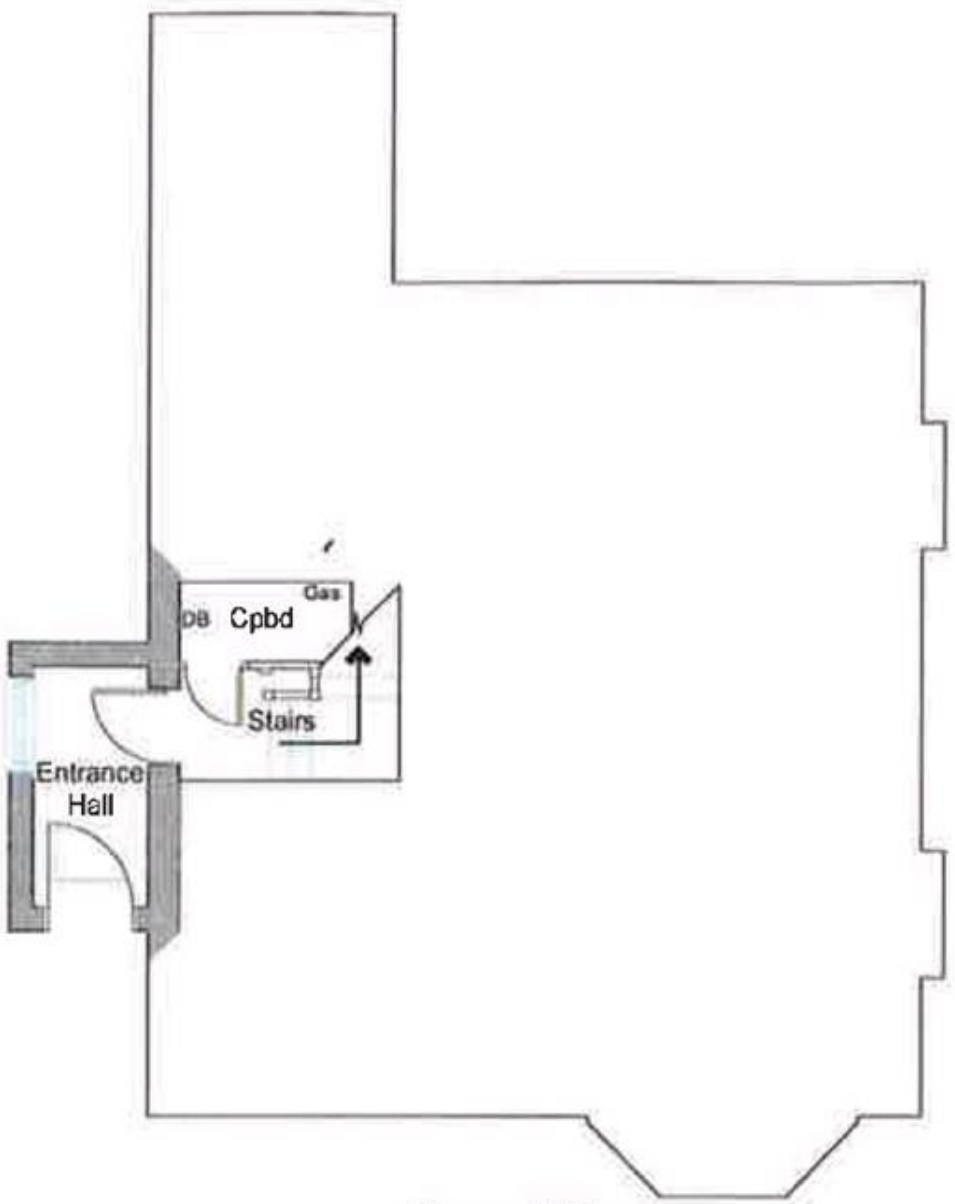
Date:	Version:	Surveyor approval:	Technical review approval:
19.09.14	1	Scott Brookes	Chris Frost



KEY

: Item Number (WHITE)

: Denotes locations where asbestos may be present. Refer to building register for details (YELLOW)

: No access (BLACK – DIAGONAL)

: Limitations of survey (PINK OUTLINE)

Please ensure that you view this plan in conjunction with the building register and relevant sections within the report, for full details of asbestos containing materials.

Figure 2 - Main building - 1st Floor

Item number locations and extent of identified asbestos products NOT TO SCALE.

Cheshire East Council

PROJECT REF: J009734

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Date:	Version:	Surveyor approval:	Technical review approval:
19.09.14	1	Scott Brookes	Chris Frost

APPENDIX II

BUILDING REGISTER AND RESULTS

aec Airborne Environmental Consultants Ltd	BUILDING REGISTER AND RESULTS		Page 1 of 1
Job Ref: J009734	**Customer: Cheshire East Council**	**Site: Crewe Cemetery, Badger Avenue, Crewe, Cheshire, CW1 2NA**	**Version: 1.0**
Date of survey: 05.09.14	**Survey Team: Scott Brookes, Rebecca Snowden**	**Survey Type: Report - Refurbishment/Demolition Survey (MA only)**	**Issue date: 19.09.14**

Item No	Laboratory Sample No.	Location	Ease of Access	Installation	Approximate Extent (m^2) unless stated	Asbestos Type	Condition	Surface Treatment	Risk Assessment (H/M/L/VL)	Recommendations	Comments
001	BA001417	Main building - First floor - Kitchen - Grey tiles and bitumen adhesive beneath the laminate flooring	N/A	Floor tile(s) & bitumen	N/A	NAD	N/A	N/A	None	None	
002	BA001418	Main building - First floor - Bathroom - Loose-fill insulation within the floor cavity	N/A	Insulation	N/A	NAD	N/A	N/A	None	None	

Guidance on the building register and results

In the register, there is a risk assessment column, and a simple material risk assessment algorithm, in accordance with HSG 264, completes this risk assessment (see table in Appendix II). This material assessment is a general guide to the risk posed by the asbestos-containing materials, using the product type, damage, surface treatment, and asbestos type to give a risk 'score' (for explanations, see below). However, the recommendations in Section 5.0 of this report are not solely a product of this assessment. The survey team, using their experience, observations and current / future usage of the premises gleaned from the customer, give recommendations based on the usage of the area, future activities, and potential for damage. It should be noted that a refurbishment and demolition survey should assume removal, and as a consequence the material risk assessment is deemed unnecessary. However, in many cases ACMs are either not removed immediately due to programme delays, or some remain, unaffected by the works, hence the material assessment has been completed to allow ongoing management.

The register table has a blank 'Remedial Actions & Date' column, designed for future usage. This column should be used when any removal works, remedial actions, labelling or inspections etc are carried out. It is recommended that regular inspections are undertaken to manage asbestos installations as part of a management plan, and that this information be recorded in the column on the register. HSG 264 states that 'the person carrying out inspections and assessing the condition of asbestos must be competent and possess enough knowledge about asbestos to make decisions on its continual management'. Should your company or organisation not have a competent person, or the human resources to implement regular inspections, AEC can offer an asbestos project management services to visit premises, and update your asbestos register.

Explanation of building register and results table:

Item number and sample numbers

This report uses 'item numbers' to denote materials that have been sampled, strongly presumed, or presumed to contain asbestos. These should be not be confused with 'sample numbers', which are unique reference numbers given to each sample taken during the survey to ensure that they are traceable through the survey and laboratory analysis process.

The diagrams, tables and photographs (Appendices I, II and IV) all use the item numbers to define any materials that have been assessed (tables also include the sample number for ease of reference).

Sample numbers

The certificates of analysis (Appendix III) use the sample number as a reference guide. Where a material has been sampled, a unique identification number is allocated to every bulk sample obtained for bulk sample analysis. The unique laboratory sample number ensures traceability within AEC's UKAS accredited laboratory system.

Strongly presumed or presumed

Where a material has not been sampled, but is visually similar to a previously sampled material then it shall be cross referenced to the previous sample and noted: 'strongly presumed (SP) as previous sample' and allocated an item number. Where a material has not been sampled, perhaps due to its inaccessibility and cannot be referenced to a previous sample taken for analysis, but is either strongly presumed based upon the surveyor's expert knowledge, or presumed (if there is insufficient evidence to suggest the installation is not asbestos) to contain asbestos, then this material shall be noted as 'strongly presumed' (SP) or 'presumed' (P) and have "Not Sampled" displayed in the laboratory sample number field on the register.

As documented in HSG 264, all inaccessible areas shall be deemed to contain asbestos until can be proven otherwise. Within the limitations of HSG 264, a ‘worst case scenario’ will be given, which is that the area will contain crocidolite. Presumed products known to have never contained crocidolite, e.g. textured coatings, will be presumed to contain their known asbestos type e.g. chrysotile. Presumptions of asbestos type shall also consider the known construction dates of the building, so properties constructed before 1971 will typically be presumed to contain crocidolite. Properties constructed between 1971 and 1985 asbestos grunerite (amosite), and post 1985 building chrysotile only. However, typically, inaccessible areas are likely to contain similar ACMs to those identified within the building.

Building register/material assessment

Location

A description of the exact location of the asbestos installation on site and its location within a certain area.

Product or installation

Type of material e.g. boarding, floor tiles, insulation etc.

Extent

Visual estimate of area (m^2), volume (m^3), or length (linear metres), of installation.

Asbestos types

Type of asbestos identified in the material. Samples are analysed in AEC's UKAS accredited laboratory, and certificates of analysis are located in Appendix III of this report.

Condition

Condition of the installation, from as new, to badly damaged.

Surface Treatment

This section states whether the material is exposed, painted, or encapsulated.

Risk assessment

This is gained by adding the 'scores' of the previous sections, using the risk algorithm (see table overleaf).

Recommendations

These are achieved using the risk assessment algorithm, but also known future usage of the premises e.g. if major works are planned. Recommendations are detailed in Section 5.0 of this report.

Remedial action & date

Column to be used as part of the asbestos management plan. This column should be completed after every inspection, removal, encapsulation, labelling etc.

Material Assessment Algorithm

Variable	Score	Examples
Installation / Product type	1	Vinyl, ‘Bakelite’, Cement
	2	Asbestos insulating board, paper, rope
	3	Pipe insulation, sprayed coating, friable debris
Condition / damage	0	As new
	1	Slight / minor damage
	2	Moderate damage - breakage to surface treatment
	3	Major damage - smashed or exposed material
Surface treatment	0	Non-friable e.g. vinyl
	1	Enclosed insulation, encapsulated AIB
	2	Unsealed AIB, encapsulated insulation
	3	Unsealed insulation or sprayed coating
Asbestos type	1	Chrysotile
	2	Amosite (asbestos grunerite) & other amphiboles
	3	Crocidolite

The scores from each of the four sections are added together to produce a material risk assessment score:

Risk score	Risk assessment
10 or more	High risk
7 - 9	Medium risk
5 - 6	Low risk
4 or below	Very low risk

Method of Determination to distinguish Asbestos Insulating Board from Asbestos Cement

In the Building Register and Results (Appendix II) the terminology ‘Board’ is used to represent Asbestos Insulating Board (AIB), ‘Ceiling Tiles’ is used to represent Asbestos Insulating Board Ceiling Tiles, and ‘Cement’ is used to represent Asbestos Cement (AC).

Where the Lead Surveyor during a survey on site is unsure whether a suspect asbestos containing material (ACM) is AIB or AC the terminology ‘Cement / Board’ is used and reported in the Building Register and Results (Appendix II) in the installation column.

If there is any doubt about the type of asbestos material after the material has been identified that it is a mixture of asbestos and cement, and reported as ‘Cement / Board’ in the Building Register and Results (Appendix II) it is recommended to have the water absorption test of a sample calculated to determine whether the materials is asbestos cement or AIB. Asbestos cement, in a dry state will absorb less than 30% water by weight, and the method is documented in the ACoP L143. Airborne Environmental Consultants perform this service to UKAS accredited standard ISO 17025, for further details on the water absorption method please contact our Laboratory Manager.

APPENDIX III

CERTIFICATE OF BULK FIBRE ANALYSIS

Samples analysed by:

James Arkwright

CERTIFICATE OF BULK FIBRE ANALYSIS

PROJECT REF: **J009734**
CERT NO.: **J009734**
CUSTOMER: **Cheshire East Council (Delamere House)**
DATE RECEIVED: **08.09.14**
DETAILS: **Asset Management Services**
Delamere House EC
Delamere Street
Crewe
Cheshire
CW1 2JZ
DATE ANALYSED: **15.09.14**
DATE REPORTED (Verbal): **18.09.14**
DATE REPORTED (Document): **18.09.14**
SITE DETAILS: **Crewe Cemetery, Badger Avenue, Crewe, Cheshire, CW1 2NA**
SAMPLED BY: **Scott Brookes, Rebecca Snowden**

Sample No.	Sample Location	Sample Description	Asbestos Type(s)
BA001417	First floor - Kitchen - Grey tiles and bitumen adhesive beneath the laminate flooring	Grey and beige fragments	NAD
BA001418	First floor - Bathroom - Loose-fill insulation within the floor cavity	Yellow fragment	NAD

Comments:

UKAS accredited for identification and site sampling. All analysis in accordance with HSG248 - Asbestos: The analysts' guide for sampling, analysis and clearance procedures 2005 and AEC 2 - Procedures manual for asbestos bulk sampling and identification of asbestos fibres.

* Estimated content, opinions and interpretations expressed herein, and tests marked '*' in this report/certificate are outside the scope of UKAS accreditation. Descriptions marked '**' in this report/certificate denote information supplied by the customer. AEC cannot take responsibility for the accuracy and representative nature of samples taken by customers.

Asbestos types: Chrysotile = white asbestos; † = Asbestos Amosite = brown asbestos; Crocidolite = blue asbestos; Tremolite; Actinolite; Anthophyllite; NAD = No Asbestos Detected; FFP = Fine fibres present, 'but too thin to identify'.

Signed: 
Print: Chris Frost

For and on behalf of Airborne Environmental Consultants Ltd.
Date: 15.09.14

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A guide to asbestos-containing materials in buildings and their asbestos content (listed in approximate order of ease of fibre release)

With the publication of HSG 248 - Asbestos: The analysts' guide for sampling, analysis and clearance procedures issued by the Health and Safety Executive (HSE), the quantitative assessment of asbestos content is outside the scope of UKAS accreditation (ISO 17025). Where analysis identifies only 1 or 2 fibres of asbestos then the term 'trace asbestos identified' is permissible and can be reported on the certificate of bulk fibre analysis. For all other asbestos contents in a building material Table 1 should be used as a guide as to the likely percentage content of asbestos in the building material. For more detailed information please refer to HSE guidance document HSG 264 Asbestos: The Survey Guide. Table 1 below is a summary of Appendix 2: ACMs in buildings in guidance document HSG 264.

Table 1

Asbestos product		Asbestos content
Sprayed coatings.	Dry applied, wet applied and trowelled finish.	55% to 85%. Likely to be present as over spray adjacent to substrate and also debris below.
Thermal insulation.	Hand-applied thermal lagging, pipe and boiler lagging, pre-formed pipe sections, slabs and blocks.	6% to 85%.
	Tape, rope, corrugated paper, quilts, felts and blankets.	Usually ~ 100%.
Asbestos board.	Millboard.	37% to 97%.
	Insulating.	Usually 15% to 25%. Older boards and some marine boards contain up to 40%.
	Insulating board in cores and linings of composite products.	16% to 40%.
Paper, felt and cardboard.		Can contain ~ 100%.
Textiles.	Ropes and yarns.	Approaching 100% unless combined with other fibres.
	Cloth.	Approaching 100%.
	Gaskets and washers.	Variable but usually around 90%.
	Strings.	Approaching 100%.
Friction products.	Resin-based materials.	30% to 70%.
Cement products.	Profiled sheets.	10% to 15%.
	Semi-compressed flat sheet and partition board.	10% to 15%. Also 10% to 25% in wood used for fire doors etc. Composite panels contained ~ 4%.
	Fully compressed flat sheet used for tiles, slates and board.	10% to 15%.
	Pre-formed moulded products and extruded products.	10% to 15%.
Textured coatings.	Decorative/flexible coatings on walls and ceilings.	3% to 5%.
Bitumen products.	Roofing felts and shingles, semi-rigid bitumen roofing, gutter linings and flashings, damp-proof courses and bitumen coatings on metals.	Usually 8%, but paper approximately 100%.
Flooring.	Thermoplastic floor tiles.	Up to 25%.
	PVC vinyl floor tiles and unbacked flooring.	Normally 7%.
	Paper-backed PVC floors.	Approximately 100%.
	Magnesium oxychloride flooring used in WCs, staircases and industrial flooring.	About 2%.
Reinforced PVC.	Panels and cladding.	1% to 10%.
Reinforced plastic and resin composites.	Used for toilet cisterns, seats, banisters, window seals and lab bench tops.	1% to 10%.
	Brakes and clutches in machines.	20% to 50%.

APPENDIX IV

PHOTOGRAPHS

Item Number 001 - First floor - Kitchen - Grey tiles and bitumen adhesive beneath the laminate flooring.

Item Number 002 - First floor - Bathroom - Loose-fill insulation within the floor cavity.

APPENDIX V

SURVEY METHODOLOGIES

SURVEY METHODOLOGIES

Refurbishment & demolition survey

A refurbishment and demolition survey is needed before any refurbishment or demolition work is carried out. This type of survey is used to locate and describe, as far as reasonably practicable, all ACMs in the area where the refurbishment work will take place or in the whole building if demolition is planned. The survey will be fully intrusive and involve destructive inspection, as necessary, to gain access to all areas, including those that may be difficult to reach. A refurbishment and demolition survey may also be required in other circumstances, e.g. when more intrusive maintenance and repair work will be carried out or for plant removal or dismantling.

There is a specific requirement in CAR 2012 for all ACMs to be removed as far as reasonably practicable before major refurbishment or final demolition. Removing ACMs is also appropriate in other smaller refurbishment situations, which involve structural or layout changes to buildings (e.g. removal of partitions, walls, units etc). Under CDM, the survey information should be used to help in the tendering process for removal of ACMs from the building before work starts. The survey report should be supplied by the client to designers and contractors who may be bidding for the work, so that the asbestos risks can be addressed. In this type of survey, where the asbestos is identified so that it can be removed (rather than to 'manage' it), the survey does not normally assess the condition of the asbestos, other than to indicate areas of damage or where additional asbestos debris may be present. However, where the asbestos removal may not take place for some time, the ACMs' condition will need to be assessed and the materials managed.

Refurbishment and demolition surveys are intended to locate all the asbestos in the building (or the relevant part), as far as reasonably practicable. It is a disruptive and fully intrusive survey, which may need to penetrate all parts of the building structure. Aggressive inspection techniques will be needed to lift carpets and tiles, break through walls, ceilings, cladding and partitions, and open up floors. In these situations, controls should be put in place to prevent the spread of debris, which may include asbestos. Refurbishment and demolition surveys should only be conducted in unoccupied areas to minimise risks to the public or employees on the premises. Ideally, the building should not be in service and all furnishings removed. For minor refurbishment, this would only apply to the room involved or even part of the room where the work is small and the room large. In these situations, there should be effective isolation of the survey area (e.g. full floor to ceiling partition), and furnishings should be removed as far as possible or protected using sheeting. The 'surveyed' area must be shown to be fit for reoccupation before people move back in. This will require a thorough visual inspection and, if appropriate (e.g. where there has been significant destruction), reassurance air sampling with disturbance. Under no circumstances should staff remain in rooms or areas of buildings when intrusive sampling is performed.

There may be some circumstances where the building is still 'occupied' (i.e. in use) at the time a 'demolition' survey is carried out. For example in the educational sector, refurbishment/demolition surveys may be conducted in schools or colleges during one closure period (e.g. holidays) and the work not undertaken until the next holiday period. Also, a demolition survey maybe conducted to establish the economic future or viability of a building(s). The survey results would determine the outcome. In such situations, the 'survey' will need extremely careful managing with personnel and equipment/furnishings being decanted and protected (as necessary), while the survey progresses through the building. Again, there should be effective isolation of the survey areas and the 'surveyed' area must be shown to be fit for reoccupation before personnel reoccupy.

The survey was carried out in accordance with the HSE document HSG 264 Asbestos: The Survey Guide, and AEC's UKAS accreditation as a Type 'C'inspection body (number 232). All sample analysis is carried out in AEC's UKAS accredited laboratory (testing laboratory 2054).

The survey was carried out by an experienced survey team, who inspect all safely accessible parts of the building, and look for any installation that potentially could contain asbestos.

Any suspect materials were sampled and subsequently analysed in accordance with HSG 248 - 'Asbestos: The analysts' guide for sampling, analysis and clearance procedures'. This method identifies the asbestos types present.

Samples are taken using low - disturbance techniques, whereby a small amount of material will be taken, after firstly wetting the sample location with a polyvinyl acetate (PVA) solution spray. This minimises the release of asbestos fibres during the process. Air monitoring carried out during sampling work of this type has shown airborne fibre concentrations to stay below the clearance indicator level of 0.01 fibres per millilitre of air.

Sampled materials are immediately placed in sealable, airtight sample bags and appropriately labelled. Sample points will be suitably filled / sealed using PVA spray, 'Polyfilla' or adhesive tape.

Survey restrictions and caveats

The value and usefulness of the survey can be seriously undermined where either the client or the surveyor imposes restrictions on the survey scope or on the techniques/method used by the surveyor. Information on the location of all ACMs, as far as reasonably practicable, is crucial to the risk assessment and development of the management plan. Any restrictions placed on the survey scope will reduce the extent to which ACMs are located and identified, incur delays and consequently make managing asbestos more complex, expensive and potentially less effective.

In refurbishment surveys, the area and scope of the work will need to be agreed between the dutyholder and the surveyor. In these surveys and in demolition surveys there should be no restrictions on access unless the site is unsafe (e.g. fire-damaged premises) or access is physically impractical. The level of intrusion will be significantly greater than with management surveys. It will include accessing structural areas, between floors and walls and underground services. Some areas may be difficult to gain entry to and/or may need specialist assistance or equipment. Access arrangements need to be fully discussed in the planning stage and form part of the contract, particularly where assistance has to be engaged. Where access has not been possible during refurbishment and demolition surveys, these areas must be clearly located on plans and in the text of the report to allow the refurbishment and demolition processes to be progressive in those areas. Any ACMs must be identified and removed at this time. It is now recognised that even with 'complete' access demolition surveys, all ACMs may not be identified and this only becomes apparent during demolition itself. Surveyors need to be competent to do all the relevant work and tasks in this class of surveys. They will need some knowledge of construction, be able to carry out the work safely and without risk to health, have the correct equipment to do the work and have the appropriate insurance.

If any restrictions have to be imposed on the scope or extent of the survey, these items must be agreed by both parties and clearly documented. They should be agreed before work starts (e.g. at the preliminary site meeting and walk-through inspection or during discussion) and are likely to form part of the contract. If during the survey, the surveyor is unable to access any location or area for any reason, the dutyholder must be informed as soon as possible and arrangements made for later access. If access is not possible, then the survey report should clearly identify these areas not accessed. Limitations should be kept to an absolute minimum by ensuring that staff are adequately trained, insured and have the appropriate equipment and tools.

N.B. For surveys where only partial access is provided for intrusion into a building, either by virtue of the need for the building to remain occupied, for restriction on the degrees of damage permitted to the building or for services to remain live, the survey cannot be classified as a full refurbishment & demolition investigation of the structure and will be classed within the report as an extended management survey. This will better highlight that some areas have not received full access into the structure and focus the need for potential further localised investigation prior to any planned refurbishment or demolition works.

In the case of refurbishment & demolition surveys, the presumption is made that all identified asbestos containing materials will be removed as these surveys are undertaken prior to major refurbishment or demolition exercises. It is possible, in certain circumstances, that some identified asbestos containing materials may be left in a building if they do not interfere with a planned refurbishment. In this case the safe management of these materials is still a regulatory requirement and the location of any remaining asbestos must be communicated to the occupants of the refurbished areas and anybody who may potentially disturb them.

Please refer to the pre-site agreement form for further clarification on surveys.

The surveyors do not disturb any suspected asbestos installation in any other way than to take a representative sample. This measure shall minimise the risk of asbestos fibre release, but shall prevent access above/behind a suspected asbestos installation. It is possible, therefore, that further asbestos materials could be present behind an existing asbestos installation.

All relevant sample point data is recorded and shown in the final report e.g. accessibility, condition, extent of material, etc. The pertinent data required to carry out a material risk assessment is recorded and the risk rating for each asbestos installation is given in Appendix II.

The material risk assessment is an assessment of the ability of the identified asbestos installations to release fibres into the air. It is not an assessment of the likelihood of damage to the materials identified. The likelihood of damage or disturbance would be determined by carrying out a priority assessment. In order to achieve this, a thorough understanding of the activities on the site is required and therefore this is a responsibility placed on the duty holder as defined in the Control of Asbestos Regulations 2012.

As discussed above, refurbishment & demolition surveys require destructive access into sealed voids and cavities within a structure, so far as is reasonably practicable. For this reason refurbishment & demolition surveys should only be undertaken prior to a major refurbishment or demolition where the damage caused to the structure will not be of concern. In addition, refurbishment & demolition surveys should only be undertaken when the building has been isolated from all sources of energy including power, gas, water etc. Surveyors may be placed at significant risk if they break into parts of the building where services are still live. If services are still connected to the building being surveyed AEC shall revert to a management survey standard for safety reasons and inform the customer as soon as possible. This type of survey will require destructive access into sealed voids which may cause significant disturbance of previously unidentified asbestos. This could place occupants or persons working nearby at significant risk. As a consequence, AEC cannot accept responsibility for any damage caused during a refurbishment & demolition survey or the costs associated with the clean-up, repair or remediation arising from it, as this type pf survey requires this damage to occur.

In order to safely carry out this type of survey, AEC will make localised inspection holes into sealed areas. In some locations it may not be possible to see the entirety of a void or cavity from an access hole (this may require the complete removal or demolition of a wall, floor, ceiling etc.). This may result in the failure to identify non-uniform or localised installations of asbestos product. AEC will not remove entire walls ceilings etc as part of a survey or carry out significant disturbance of structural elements of a building. This lies outside of AEC’s area of competence and will put our survey teams and others potentially at risk, as this is deemed demolition as opposed to surveying.

In refurbishment & demolition surveys, AEC shall make periodic access into any obvious non-asbestos insulation materials but shall not remove all insulation coverings. It is possible therefore that some localised areas of asbestos may not be identified beneath non-asbestos insulation coverings.

Where access is required behind previously identified asbestos materials e.g. AIB ceilings, then a licensed asbestos removal contractor will be employed, and following a 14-day notification to the relevant authority, the asbestos materials will be removed under fully controlled conditions, to inspect behind. A certificate of reoccupation will be required prior to dismantling the enclosure. This will only take place with prior agreement with the customer and a full discussion on the costs and programme involved.

During refurbishment & demolition surveys AEC will not normally break through concrete slab floors unless specifically requested to do so by the customer. In such circumstances a specialist contractor will be required to undertake the breaking work and be paid for by the customer. It is common to find sub-slab pipe ducts in many types of property which often have asbestos lagging and shuttering boards present.

AEC shall not break into structural elements of a building such as brick walls, cavity walls, chimney stacks etc. where it may place the survey team and others at risk of structural collapse i.e. in structurally unsafe buildings. Any asbestos products present in these areas may not be identified during the survey and therefore caution must be applied during the breakthrough / dismantling of structural elements of a building.

Where buildings have been boarded for security reasons, AEC shall not be responsible for any asbestos containing materials present behind security fixtures unless these have been removed by the customer. This is likely to effect doorways and windows primarily.

AEC shall not break through installations where this could result in injury to other persons, e.g. high level windows/walls on the exterior of a building where materials could fall onto public pavements etc.

It must be noted that AEC have not inspected areas of the property/structure which would cause structural or security problems to the property prior to refurbishment or demolition. AEC will not remove window casings, for example, if the property must remain secure or is to be re-occupied. Breakthroughs of roof, particularly flat roofs which are known to have asbestos layers, will not be carried out if the building is to remain in-situ for a period of time, as this will affect the weather integrity, and as a result, safety of the property.

AEC have not carried out any works considered to be demolition, to access parts of the property, such as removal of steel joists, stairwells, or concrete slabs / cavity closures, as this is not deemed reasonably practicable in an asbestos survey. Should access to these areas be specific to the work, then the survey may need to be completed at actual demolition. It is not deemed reasonably practicable for the asbestos survey team to grub-up concrete slabs, remove underground tanks, or concrete lintels etc. without the assistance of a demolition contractor and heavy plant and machinery. Furthermore, extensive sampling does not ensure common items such as shuttering beneath concrete, or packers used in construction are identified in their entirety, due to the random nature of their use.

All materials sampled and suspected to contain asbestos will not be removed by the survey team to look behind for further suspect materials, as removing asbestos materials may pose a risk to health and breach CAR 2012, such as licensing requirements.

APPENDIX VI

GENERAL RESTRICTIONS

GENERAL RESTRICTIONS

AEC have instructed all survey teams that health and safety considerations are paramount during our work. If the survey team find an area where access or sampling will present a risk to themselves or others, they have been given authority to cease works until such time that the risk can be controlled to acceptable levels. This may include accessing confined spaces, work at heights, work near active equipment or processes etc. If such a situation arises, AEC shall inform the customer and explore the possible solutions to the problem. In such instances, AEC will expect the customer to sign to show that the restriction has been agreed.

It should be noted that the findings of the survey are discussed across the report in its entirety. Readers should note the contents in all sections of the report and should not rely purely on the information given in individual sections of the report.