

LAND INVESTIGATION SURVEY
OF
1 CANADA COTTAGES, STORTFORD ROAD, GREAT DUNMOW, ESSEX, CM6 1SH



CLIENT: CINDY HOWELLS
1 CANADA COTTAGES, STORTFORD ROAD, GREAT DUNMOW, ESSEX, CM6 1SH

UPRN NO: N/A
PROJECT NO: J828691
DATE: November 2022



CONTENTS	PAGE
1.0 EXECUTIVE SUMMARY	3
2.0 INTRODUCTION	4
3.0 SURVEY TYPE	5
4.0 SPECIFIC SURVEY INFORMATION	8
5.0 UNAVOIDABLE CAVEATS	10
6.0 QUALITY ASSURANCE STATEMENT	11

APPENDICES

APPENDIX 1	ASBESTOS REGISTER
APPENDIX 2	PHOTOGRAPHS
APPENDIX 3	BULK ANALYSIS CERTIFICATE
APPENDIX 4	SITE DIAGRAMS
APPENDIX 5	GENERAL SURVEY INFORMATION

1.0 EXECUTIVE SUMMARY

1.1 Asbestos containing materials have been identified or strongly presumed in the following locations.

Location	Description	Priority/Risk	Recommendation
. / Rear Garden Plot / External	Red cement roof slate to RHS boundy fenceline	Medium	Remove under controlled conditions
. / Rear Garden Plot / External	Corrugated cement roof sheets to/below soil	Low	Remove under controlled conditions
. / Rear Garden Plot / External	Red cement roof sheet to rear of garage	Low	Remove under controlled conditions
. / Rear Garden Plot / External	Cement roof sheet to LHS boundary fenceline	Low	Remove under controlled conditions

1.2 The following areas were not accessed during the survey and must be presumed to contain asbestos materials. To limit the amount of No Access areas detailed within this report Environtec Ltd have not mentioned any voids behind fixed structures that require fully intrusive access.

Location	No Access Area	Reason For No Access
There were no inaccessible areas recorded.		

1.2.1 The client should note that if excavation, demolition or refurbishment works are to be undertaken which was not included in the scope of this survey, or was physically and visually impossible to access, further investigations should be carried out before any works commence.

2.0 INTRODUCTION

- 2.1 Following evaluation of the client's requirements and considering the aim and purpose of the survey and detailed planning considerations we have undertaken a **Land Investigation Survey** where reasonably practicable of *1 Canada Cottages, Stortford Road, Great Dunmow, Essex CM6 1SH*.
- 2.2 The site survey has been undertaken and report compiled in accordance to include elements from both *HSG248: Asbestos: The Analysts' Guide* and *HSG264 Asbestos: The Survey Guide*.

Priority Assessment has been included and is outside the scope of our UKAS accreditation to HSG264 Asbestos: The Survey Guide.

The type of survey undertaken may vary, depending on the aim and purpose for which it is to be used. Surveys before demolition and refurbishment will continue to be required under *Control of Asbestos Regulations (CAR) 2012* and the *Construction (Design & Management) Regulations 2015*. However, it is anticipated that most surveys will be undertaken to comply with the *Duty to Manage Asbestos in Non-Domestic Premises Regulation 4 of the Control of Asbestos Regulations 2012*. In these cases, the aim of an asbestos survey is, as far as reasonably practical, to locate and assess all the Asbestos Containing Materials (ACMs) present and its purpose is to present the information collected in a way which allows the employer to manage the risk.

- 2.3 Where asbestos has been identified and planned to be disposed of, all asbestos waste must be disposed in accordance with the **Control of Asbestos Regulations (CAR) 2012**, **Hazardous Waste Regulations 2005**, and the **Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009**.

The hazardous waste threshold of 0.1% w/w is purely for classifying any material that is generated prior to being exported away from the site as waste, and alone does not provide any quantitative risk assessment towards asbestos exposure, and any planned ongoing works must ensure that employees (and neighbouring parties) are not unnecessary exposed to asbestos with the considerations with not causing further pollution (contamination) to land (and air) of asbestos materials.

- 2.4 This survey report is in a number of sections, the essential sections will be the Asbestos Register (Appendix 1) which is a detailed systematic diligent inspection and sampling report of each room with enhanced annotated Plans (Appendix 4) indicating where samples have been taken and asbestos positively identified.

3.0 SURVEY TYPE

3.1 Land Investigation Survey

3.1.1 Its purpose is to locate as far as reasonably practicable, the presence and extent of any suspect Asbestos Containing Materials in the ground which could be damaged or disturbed during foreseeable projects, maintenance and installation, such as development or to assist with the preparation of a Material Management Plan.

3.1.2 The purpose of the survey is to assist the client to comply with the *Health and Safety at Work Act 1974* and the *Control of Asbestos Regulations 2012 (Regulation 4)* which contains an explicit duty on the owners and occupiers of non-domestic premises who have responsibilities to assess and manage the risks from the presence of asbestos.

3.1.3 Every effort has been made to identify all asbestos materials so far, as was reasonably practical to do so within the scope of the survey and the attached report. Methods used to carry out the survey were agreed with the client prior to any works being commenced.

3.1.4 Survey techniques used involves trained and experienced surveyors using the combined diligent approach with regard to visual examination and necessary bulk sampling. It is always possible after a survey that asbestos based materials of one sort or another may remain in the property or area covered by that survey, this could be due to various reasons:

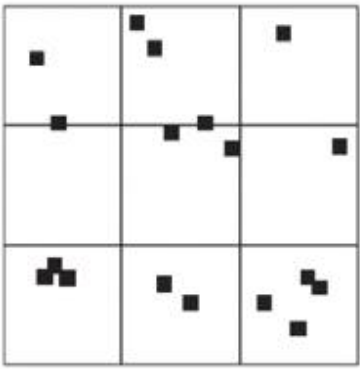
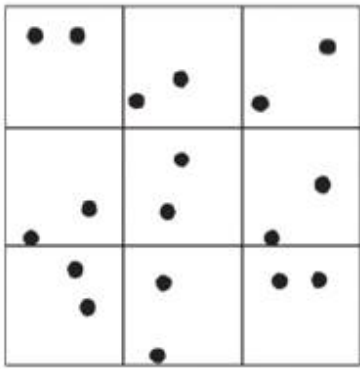
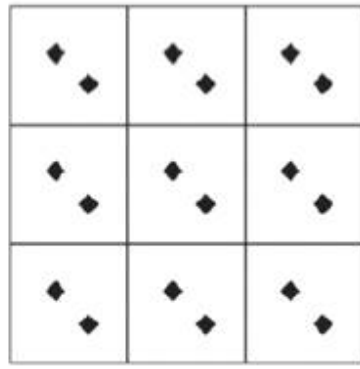
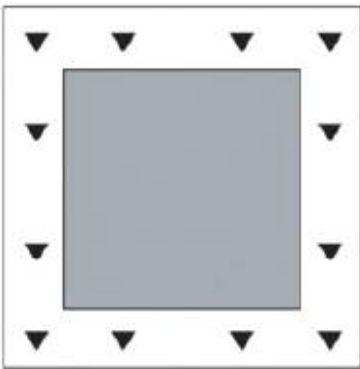
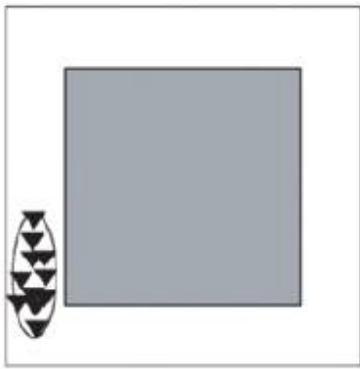
- Asbestos materials existing within areas not specifically covered by this report are therefore outside the scope of the survey.
- While soil samples have been taken using the necessary sampling strategy, asbestos may well be present and hidden below the surface and not visible until the ground is excavated (or disturbed) at a later date.

3.1.5 There are several approaches for deciding the locations of the sampling location to design and develop a sampling plan depending on the sampling objectives. These are as follows:

- **Systematic** sampling where samples are collected using a predefined sampling pattern
- **Probability-based** sampling designs apply sampling theory and involve random selection of sampling units
- **Judgemental** sampling designs involve the selection

In practice, many sites may require combination of sampling approaches depending on the survey purpose and the suspected distribution of the asbestos. The use of a regular grid pattern to divide the site into sampling areas is widely used.

Unless specified, Environtec have adopted a systematic sampling strategy collecting a composite sample. A composite sample is where several sampling units are combined or mixed to form the physical sample. Composite sampling is cost-effective because it reduces the number of analyses needed to confirm whether asbestos is present or not.

Simple random sampling	Stratified random sampling	Systematic sampling
		
Judgemental sampling (1)	Judgemental sampling (2)	
		

3.1.6 Using the formula extracted from *HSG248: Asbestos: The Analysts' Guide*, and the information provided by the client allows calculating the amount of soil samples to be taken from the site.

Approximate guidelines for sample numbers for an asbestos survey has been taken from HSG248;

- A single site of area which is greater than one hectare, the number of samples on a non-suspect site can be derived from $3.5+3.5p$
- A smaller non-suspect sites that is less than one hectare, the number samples is calculated as $7+7p$
- When asbestos is present the number of samples is calculated $9+9p$

Note:-

where p = area in hectares (ha)

all calculation results are to be rounded to the next whole number

3.1.7 Soil samples are extracted from the ground which is generally by digging manual tools as this reduces the risk of striking services which may not have been identified by a CAT device. Prior to collecting the samples the removal of vegetation and scraping an approximate 1.5–2 cm of the top layer from the surface prior to digging to the required depth. The material was placed onto a suitable surface to for a heap for coning and quartering to allow a representative sample to be collected. To maximise the

chance for the laboratory to observe visible fragments (and loose fibres) of asbestos each sample size was a minimum of 1 litre in volume (approx. 1kg in weight). All surplus material was used as the back-fill material.

- 3.1.8 This survey will detail all areas accessed and all samples taken, where an area is not covered by this survey it will be due to No Access for one reason or another i.e. working in sensitive location or just simply no access as keys not available such as a sub-station.
- 3.1.9 Access for the survey may be restricted for many reasons beyond our control such as where electrical equipment is present and live. Our operatives have a duty of care under the Health and Safety at Work act (1974) for both themselves and others.
- 3.1.10 Certain materials contain asbestos to varying degrees and some may not be uniformed (soil, aggregates or textured coating for example). Where this is the case the samples will be taken in accordance with the sampling regime however this may not be representative of the whole product throughout.

4.0 SITE SPECIFIC SURVEY INFORMATION

- 4.1 The report is the result of the analysis of suspect materials following a visual inspection and sample collection.
- 4.2 Access was arranged with the client, who enabled and provided all keys and access facilities to all necessary areas.
- 4.3 The rear garden plot belongs to the dwellings within its same boundary area. The garden has large amounts vegetation growth; grass, moss, trees, brambles, nettles etc. with a established hedge to a natural stream.
- 4.4 The physical survey was undertaken on the 31st October 2022, where 4 soil samples were collected and underwent asbestos analysis.
- 4.5 The site survey was undertaken and completed by Alan Frost, during normal business hours of 08.00 to 18:00.

4.6 The bulk analysis of suspect materials for asbestos content was undertaken as follows:-

Date Analysed	Laboratory Technician(s)
08/11/2022	Holly Jones, Alan Frost

- 4.7 Where the client has requested for other laboratory analysis for additional contaminants, such as heavy metals, WAC etc., please refer to the appendices for results.
- 4.8 During the collection of the soil samples the weather conditions were Update visibility and an average temperature of 14°C, barometric pressure of 1008mb with a wind direction of SE at ~9mph.
- 4.9 Samples were taken of suspected materials and where possible photographs of the samples taken. Clearly it is not possible to sample every material encountered therefore, where common areas and features exist, representative samples were taken and extrapolations were made to the nature of the material.
- 4.10 Photographs have been included in the report to highlight particular instances or detail as required.
- 4.11 Plans have been prepared by Environtec Ltd to assist in the location and designation of areas for ease of reference. It must be noted that these plans are not to be regarded as accurate but for assistance purposes only. These plans are located within the appendices of this report.
- 4.12 It must be noted that the information contained within this report is compiled and dealt with in a number of sections to enable and give a complete overall assessment and conclusion when considering the asbestos materials positively identified and possible potential hazards.

It is therefore recommended that when passing information onto third parties such as contractors

etc. that the complete report be issued to ensure that all information is available to such responsible parties that they may consider all options and actions to be undertaken to so far as is reasonably practicable.

The measurements given within this report for all sampled asbestos/non asbestos materials are approximations only. Environtec Ltd cannot accept responsibility for discrepancies on these measurements. Any future asbestos removal projects should be priced on the basis that the material has been accurately measured by the removing party themselves.

4.13 The survey included the following areas of the site:-

To collect the requested four soil samples from the garden, as directed by the client. The extracted soil sample will be taken from approx. 500mm BGL then underwent asbestos screening.

4.14 The following areas were specifically excluded from the survey:-

Only to undertake works defined within the scope of works.

5.0 UNAVOIDABLE CAVEATS

5.1 We have not inspected any part or area requiring specialist access equipment that has not been agreed prior to undertaking the survey. Any requirement for specialist access equipment has been specifically excluded unless otherwise requested or stated.

5.2 Whilst every effort will have been made to identify the true nature and extent of the asbestos material present to be surveyed, no responsibility has been accepted for the presence of asbestos in materials:-

- other than those sampled at the requisite representative density. This especially applies to non-uniformed materials where all sampling indicates the material as non-asbestos yet further subsequent sampling at a later date has indicated the material to contain asbestos;
- where there are large areas and amounts of overgrown vegetation and stockpiles of material such as rubbish, soil, aggregates etc., which would conceal asbestos containing materials;
- soil sample amounts and their locations have been collected following guidance and information provided by the client. It is possible that asbestos materials may have not been identified due to the nature of the survey where asbestos is hidden below the surface but following published guidance from the HSE, HSG248, of the sample amounts for this project would increase confidence to locate any potential asbestos containing materials;
- where weather conditions could have an impact on the surveyors judgement and visibility, i.e. asbestos containing materials becoming wet or significantly degraded leading the asbestos containing material becoming cloaked or blended within the ground and its surface.

6.0 QUALITY ASSURANCE STATEMENT

This report, J828691, has been compiled by the following authorised staff member of Environtec Ltd:

Name: Alan Frost

Signature:

A handwritten signature in black ink, appearing to read 'A Frost', written over a faint horizontal line.

Designation: SHEQ Manager **Date:** 8 November 2022

The contents of this report have been reviewed by a member of the Quality Assurance Department, whereby they confirm the results are accurate and any conclusions and recommendations made are suitable and in line with current company policy.

Name: Alan Frost

Signature:

A handwritten signature in black ink, appearing to read 'A Frost', written over a faint horizontal line.

Designation: SHEQ Manager **Date:** 8 November 2022

APPENDIX 1

ASBESTOS REGISTER

The following are the summary of asbestos materials and priority rating assessments and should be read in conjunction with the attached plans and report

SITE ADDRESS: 1 CANADA COTTAGES, STORTFORD ROAD, GREAT DUNMOW, ESSEX, CM6 1SH										DATE: 31/10/2022	
SURVEY TYPE: DOMESTIC MANAGEMENT SURVEY (WITH MA AND PA)										PROJECT REF: J828691	
Survey Level	Location ✓ A	No. of Occupants ✓ B	Description (product type) *C	Approx Extent of Material ✓ D	Condition (Surface Treatment) *E	Condition (Damage/Deterioration) *F	Vulnerability to Damage ✓ G	Sample No/ Analytical Result (Asbestos Type) *H	Total Score MA +PA = * ✓	Priority/Risk	Recommendations
Man	External / Rear Garden Plot	-	Soil Sample @ 500mm BGL	1no.	-	-	-	UV000243 / No Asbestos Detected	-	-	No further action required
Man	External / Rear Garden Plot	-	Soil Sample @ 500mm BGL	1no.	-	-	-	UV000244 / No Asbestos Detected	-	-	No further action required
Man	External / Rear Garden Plot	-	Soil Sample @ 500mm BGL	1no.	-	-	-	UV000245 / No Asbestos Detected	-	-	No further action required
Man	External / Rear Garden Plot	-	Soil Sample @ 500mm BGL	1no.	-	-	-	UV000246 / No Asbestos Detected	-	-	No further action required
Man	External / Rear Garden Plot (0)	None (0)	Red cement roof slate to RHS boundy fenceline (1)	90m ^L (3)	Debris/Loose material (3)	High Damage (3)	High (3)	UV000247 / Chrysotile (1)	8 + 6 = 14	Medium	Remove under controlled conditions
Indicates parameter for Material Assessment algorithm(MA)				Product type *C Surface Treatment *E Extent of damage *F Asbestos Type *H				Priority Rating: Very low <9 Low 10-12 Medium 13-15 High ≥16			
Indicates parameter for Priority Assessment algorithm(PA)				Location ✓ A No.of Occupants ✓ B Vulnerability to damage ✓ G Extent of materials ✓ D							
All the following areas have been checked:				A: Roof/external eaves and soffits B: Boilers/vessels pipes C: Ceilings D: Ducts E: Flooring F: Air handling systems G: Industrial appliances H: Heating system I: Interior walls panels							

SITE ADDRESS: 1 CANADA COTTAGES, STORTFORD ROAD, GREAT DUNMOW, ESSEX, CM6 1SH										DATE: 31/10/2022	
SURVEY TYPE: DOMESTIC MANAGEMENT SURVEY (WITH MA AND PA)										PROJECT REF: J828691	
Survey Level	Location ✓ A	No. of Occupants ✓ B	Description (product type) *C	Approx Extent of Material ✓ D	Condition (Surface Treatment) *E	Condition (Damage/Deterioration) *F	Vulnerability to Damage ✓ G	Sample No/ Analytical Result (Asbestos Type) *H	Total Score MA +PA = * ✓	Priority/Risk	Recommendations
Man	External / Rear Garden Plot (0)	None (0)	Corrugated cement roof sheets to/below soil (1)	6m ² (1)	Debris/Loose material (3)	High Damage (3)	High (3)	UV000248 / Chrysotile (1)	8 + 4 = 12	Low	Remove under controlled conditions
Man	External / Rear Garden Plot (0)	None (0)	Red cement roof sheet to rear of garage (1)	<1m ² (1)	Debris/Loose material (3)	High Damage (3)	High (3)	Strongly presumed similar to UV000247 / Chrysotile (1)	8 + 4 = 12	Low	Remove under controlled conditions
Man	External / Rear Garden Plot (0)	None (0)	Cement roof sheet to LHS boundary fenceline (1)	<1m ² (1)	Debris/Loose material (3)	High Damage (3)	High (3)	Strongly presumed similar to UV000247 / Chrysotile (1)	8 + 4 = 12	Low	Remove under controlled conditions
Man	External / Rear Garden Plot		The area inspected and samples collected were from the rear garden plot which were separated by a timber fence. The land comprised of an approx. area of 1092m ² , measuring 91m deep by 12m wide. The land was mostly laid lawn with shrubs to the borders and various tree's at different heights, and with a wire fenced vegetable plot. The client was walked the site prior to leaving site advising of the initial observations which included the discovery of red asbestos cement roof sheets to the right hand side boarder fence, corrugated cement debris to an old dumping area and various other asbestos materials within the boundary but was excluded from the survey, e.g. cement roof sheets to the outbuildings and high-level bird house								
NOTE:											
Indicates parameter for Material Assessment algorithm(MA)			Product type *C Surface Treatment *E Extent of damage *F Asbestos Type *H				Priority Rating: Very low <9 Low 10-12 Medium 13-15 High ≥16				
Indicates parameter for Priority Assessment algorithm(PA)			Location ✓ A No.of Occupants ✓ B Vulnerability to damage ✓ G Extent of materials ✓ D								
All the following areas have been checked:			A: Roof/external eaves and soffits B: Boilers/vessels pipes C: Ceilings D: Ducts E: Flooring F: Air handling systems G: Industrial appliances H: Heating system I: Interior walls panels								

APPENDIX 2

PHOTO PAGES OF ASBESTOS OCCURENCES

ADDRESS:	1 Canada Cottages, Stortford Road, Great Dunmow, Essex, CM6 1SH
-----------------	--

BUILDING NAME:	
FLOOR/LOCATION:	External Rear Garden Plot
DESCRIPTION:	Red cement roof slate to RHS boundy fenceline
RECOMMENDATIONS: Remove under controlled conditions	
EXTENT:	>50m ² or >50m pipe run
SAMPLE REF:	UV000247
RESULT:	Chrysotile



BUILDING NAME:	
FLOOR/LOCATION:	External Rear Garden Plot
DESCRIPTION:	Corrugated cement roof sheets to/below soil
RECOMMENDATIONS: Remove under controlled conditions	
EXTENT:	<10m ² or <10m pipe run
SAMPLE REF:	UV000248
RESULT:	Chrysotile



BUILDING NAME:	
FLOOR/LOCATION:	External Rear Garden Plot
DESCRIPTION:	Red cement roof sheet to rear of garage
RECOMMENDATIONS: Remove under controlled conditions	
EXTENT:	<10m ² or <10m pipe run
SAMPLE REF:	SPST UV000247
RESULT:	Chrysotile



ADDRESS:	1 Canada Cottages, Stortford Road, Great Dunmow, Essex, CM6 1SH
-----------------	--

BUILDING NAME:	.
FLOOR/LOCATION:	External Rear Garden Plot
DESCRIPTION:	Cement roof sheet to LHS boundary fenceline
RECOMMENDATIONS:	Remove under controlled conditions
EXTENT:	<10m ² or <10m pipe run
SAMPLE REF:	SPST UV000247
RESULT:	Chrysotile



APPENDIX 3

BULK ANALYSIS CERTIFICATE

CERTIFICATE FOR THE IDENTIFICATION OF ASBESTOS FIBRES

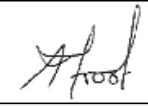
Client:	Cindy Howells	Surveyor:	Alan Frost
Client Address:	1 Canada Cottages, Stortford Road, Great Dunmow, Essex, CM6 1SH	Analysis Report No:	J828691
Attention of:	Cindy Howells	Report Date:	8 November 2022
Site Address:	1 Canada Cottages, Stortford Road, Great Dunmow, Essex, CM6 1SH	Site Reference No:	N/A
Date Samples Taken:	31st October 2022	No. of Samples:	6
Date Samples Received:	8th November 2022	Obtained:	6
Date of Analysis:	8th November 2022		
Analysed By:	Alan Frost Holly Jones		

Method Statement
 Samples of material, referenced below, have been examined to determine the presence of asbestos fibres, using Environtec 'In House' documented technical method of transmitted/polarised light microscopy and centre stop dispersion staining, in accordance with our UKAS Accreditation, based on the HSG 248 Asbestos: The Analyst Guide. Calibration of equipment and general quality control procedures are in accordance with our in house quality control document. Sampling methods are in accordance with documented in-house procedures and UKAS Accreditation. If during the search of the two 'pinch' samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term 'trace asbestos identified' shall be used.

Disclaimer
 If samples have been DELIVERED the site address and actual sample location or sample type is given by the client at the time of delivery. Environtec are not responsible for the accuracy or competence of the sampling by third parties. Under these circumstances Environtec cannot be held responsible for the interpretation of the results shown. When the test certificate indicates that bulk samples were taken by the client, they are outside the scope of our UKAS Accreditation for sampling. Environtec takes responsibility of information reported, only when a staff member of Environtec takes the sample(s).

Sample Number	Client Ref	Sample Location / Sample Type	Fibre Type Detected
UV000243		External / Rear Garden Plot / Soil Sample @ 500mm BGL - Soil	NADIS
UV000244		External / Rear Garden Plot / Soil Sample @ 500mm BGL - Soil	NADIS
UV000245		External / Rear Garden Plot / Soil Sample @ 500mm BGL - Soil	NADIS
UV000246		External / Rear Garden Plot / Soil Sample @ 500mm BGL - Soil	NADIS
UV000247		External / Rear Garden Plot / Red cement roof slate to RHS boundry fenceline - Cement	Chrysotile
UV000248		External / Rear Garden Plot / Corrugated cement roof sheets to/below soil - Cement	Chrysotile

Material type is a subjective opinion by the analyst based on asbestos content, appearance and experience. On rare occasions where there is an element of doubt for samples which are borderline or too insignificant to determine whether the material is asbestos insulation board or asbestos cement, you will be notified and offered a water absorption test. A water absorption test is a longer process undertaken to a supplement asbestos analysis and has a cost implication. We will advise you accordingly should this situation arise. Environtec Ltd cannot be held responsible for inaccuracies based on the material type opinion if a water absorption test has been offered and refused. Material type opinion falls outside the scope of our UKAS accreditation.	K	NADIS	= NO ASBESTOS DETECTED IN SAMPLE	
			CROCIDOLITE	= Typically Known as Blue Asbestos (Amphibole Group)
			AMOSITE	= Typically Known as Brown Asbestos (Amphibole Group)
	E		CHRYBOTILE	= Typically Known as White Asbestos (Serpentine Group)
			ANTHOPHYLLITE	= Asbestos (Amphibole Group)
	Y		ACTINOLITE	= Asbestos (Amphibole Group)
		TREMOLITE	= Asbestos (Amphibole Group)	
All samples will be retained in the laboratory for a minimum of 6 Months.				

Typed By:	Alan Frost Holly Jones	Authorised Signatory:	
Position:	SHEQ Manager Deputy Laboratory Manager	Print Name:	Alan Frost

UKAS/New AFI/Statements/EA

Certificate issued by 15-16 Bruce House, The Street, Hatfield Peverel CHELMSFORD, Essex, CM3 2DP.

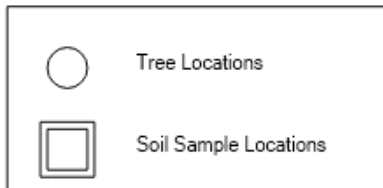
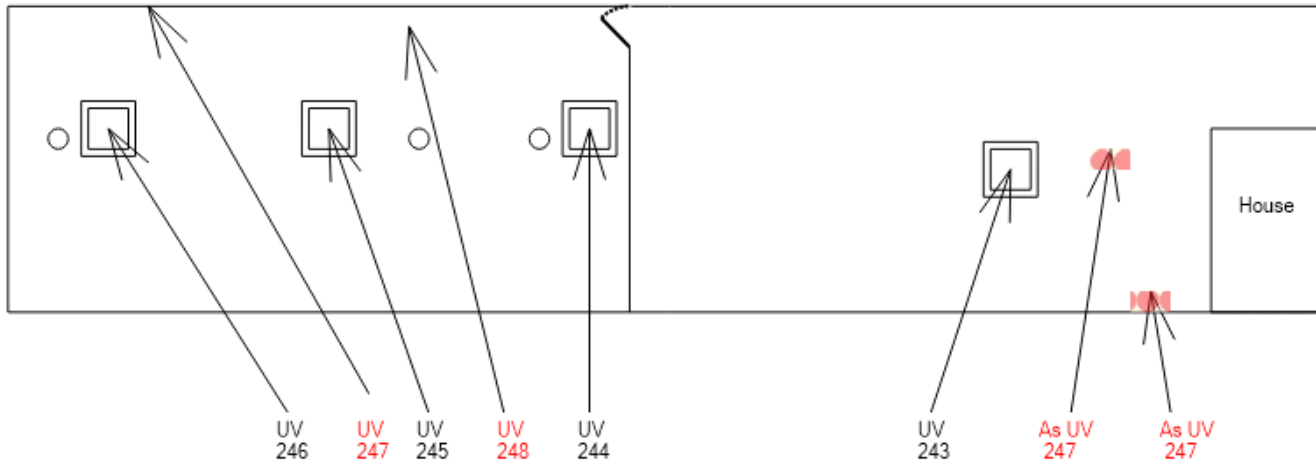
APPENDIX 4

SKETCH / PLANS

These plans are provided to assist in the location and designation of rooms etc

The accuracy of the plans / sketches cannot be guaranteed.

Environtec House
The Street
Hatfield Peverel
Chelmsford ESSEX
CM3 2EJ
Tel:01245 381900
Fax:01245 381666



○ S = Sample Location

■ = Identified, strongly presumed and presumed asbestos

■ = No access - presumed asbestos within these rooms

■ = Outside Scope of Survey

Client: Cindy Howells
1 Canada Cottages
Stortford Road
Great Dunmow
Essex
CM6 1SH

Project: J828691

Site: 1 Canada Cottages
Stortford Road
Great Dunmow
Essex
CM6 1SH

Building: .

Floor: External

N.T.S (Not To Scale)

APPENDIX 5

GENERAL SURVEY INFORMATION

GENERAL SURVEY INFORMATION

1.0 SURVEY METHOD

1.1 The survey was conducted by means of visual inspection and subsequent sampling of suspect bulk materials. Environtec Ltd is accredited by UKAS for surveying, this incorporates carrying out sampling of suspect asbestos bulk materials. Where the surveyor suspected a material of containing asbestos, a sample was taken for analysis. The samples taken were chosen as being representative of the material under investigation. Therefore, where there are visually similar materials, they have been regarded as being uniform composition.

1.2 Health & Safety

1.2.1 Working at Heights

All high-level survey work was undertaken in accordance with The Work at Height Regulations 2005 where a risk assessment is undertaken prior to the use of Step ladders where a second operative may have been required to assist in stabilising ladders, etc. In certain instances where the operative was at risk from falling a harness would be worn and / or scaffold platforms erected.

1.2.2 Entry into Confined Spaces

Entry into confined spaces was only permitted to staff holding a current confined space training certificate. All necessary equipment such as escape packs, gas monitors and intrinsically safe electrical equipment and then only after authorisation from the site/ building manager was given and investigating the atmosphere for fumes / oxygen deficiency, etc. Once the responsible person was satisfied that the confined space was safe for the inspection to take place, a second operative waited outside and kept in regular contact with the surveyor. For areas of particular concern and large duct systems the surveyor was provided with a harness and rope.

1.2.3 Loft Space and Roof Structures

Surveyors would only enter roof spaces and flat-roof structures when they were considered safe to do so. Surveyors would enter loft spaces if they were boarded across the joists or could be assured to remain on the timber joists if their strength permits. Environtec Ltd policy on loft spaces if not boarded, is to visually inspect the loft area from the loft hatch and make presumptive statements to any potential ACMs visible.

1.2.4 Inadequate Lighting

All surveyors would use torches for buildings with no natural or electrical illumination and would have full use of mobile phones in case of emergency. Surveyors would work in pairs in these circumstances.

1.2.5 Construction and Demolition Sites

When surveys or sampling was to take place on construction or demolition sites the operatives would wear hard hats, protective footwear and luminous jackets, all of which would have been provided. Surveyors would work in pairs and have had full use of mobile phones for case of emergency in these circumstances.

1.2.6 **Working on Machinery**

Working on machinery that was not guarded or that was functional was not permitted.

1.2.7 **Chemical Hazards**

Surveyors would access the premise's COSHH register and identify any chemical hazards that need the appropriate action to be taken prior to entering such areas.

1.2.8 **Biological Hazards**

Surveyors would only enter areas identified as biological hazards after donning the appropriate personal protective equipment in accordance with the client's instructions, training and warning signs when safe to access. Should other biological hazards such as pigeon excrement, rats or needles be encountered, surveyors would don the appropriate personal protective equipment; including overalls, gloves, boots and respiratory equipment.

1.2.9 **Noise Hazards**

Surveyors would don the appropriate ear defenders or plugs when entering areas that had a noise hazard in accordance with the client's instructions, training and warning signage.

1.2.10 **Sampling Safety**

All surveyors conducting sampling would don protective disposable overalls and overboots and wear suitable face fitted RPE; mostly an orinasal mask would be adequate, but higher protection may have been needed for severely contaminated buildings or higher risk materials e.g. sprayed coating.

Care would always be exercised when carrying out bulk sampling to ensure that the disturbance of the materials being sampled is minimised. When carrying out sampling it would be ensured that the area from which the sample was taken was repaired and no loose materials were spread around the area.

This would be undertaken by minimizing emission of asbestos fibres by use of a water spray or PVA/water mixture spray to damp down a panel or lagging. A polythene sheet laid under the sample point was used to collect any debris, this was wiped down with wet wipes before removing. An "H" type vacuum cleaner was used if available. All sampling tools were cleaned before moving on to the next sample, placing dirty wet wipes into a sealable sample bag, which upon filling would be double bagged and transferred to the asbestos waste bag in the laboratory. Operatives undertaking the survey would have relevant Company identification and would undertake their duties discreetly without causing alarm or stress to occupants by unnecessary conversation or remarks.

Staff involved in taking samples of this nature would be fully acquainted with the environmental hazards and would take essential precautions for both their own protection and that of personnel

in the vicinity. All samples would be taken while the area is not occupied, but explanations to personnel present what was being done would be undertaken, with as much honesty as the client and the situation demands. In an occupied building, sampling may have been undertaken during lunch breaks or after normal working hours.

Deviations from the above method may have been required where instances are such that wearing full protective clothing cannot be worn without being alarmist to occupants. It would have been suggested to the client that the sampling be conducted out of hours or alternatively recommended air monitoring been conducted whilst sampling was in progress to reassure occupants.

1.2.11 **Sampling Techniques for Bulk Materials**

When taking a sample care would be exercised to minimise the damage caused. Often it is possible to find a damaged area of boarding or insulation from which a sample would be removed without causing further damage. When it was necessary to make a fresh hole to take a sample this would be done with a sharp implement such as a Stanley knife, bradawl, cork borer or a hand drill. The sample would be extracted and placed directly into self-seal plastic bags and double bagged. The sample reference number was allocated to each sample taken and recorded on the sample bag ensuring that the dust suppressant was sprayed within the vicinity and over the sampling surface.

The damaged material would be repaired with either polyfilla and/or fabric tape.

Labels indicating sample location were left in-situ if permitted by the client.

2.0 **SAMPLING STRATEGY**

2.1 The object of carrying out sampling was to identify the nature and extent of any visible asbestos bearing material.

All sampling was undertaken causing the minimum possible nuisance and potential risk to health of building occupants and visitors.

2.2 **Sampling Strategies to Locate Asbestos**

The strategy was based on a systematic diligent visual examination of a building, based on the procedures detailed in Environtec's Technical Procedures Manual and usually in conjunction with the scope of work and building plans supplied by the client.

When accessing voids, it was essential to inspect for debris from damaged asbestos either from a previous installation or careless removal.

Also representative inspections under existing non-asbestos insulation for asbestos residue from a previously inadequate asbestos removal operation would have been undertaken.

2.2.1 Visual Inspections

If the surveyor can confirm from a visual basis that the asbestos material was uniformed then it is possible to extrapolate sampling information from identical locations to keep unnecessary sampling to a minimum.

2.2.2 Panels

Samples of every single ceiling panel was evidently not required but sufficient were needed to

be sure of locating all the same installations of a particular type. It was recommended that at least one sample per room be taken or every 25 m² or increase the frequency should it be required. However, samples of each type of asbestos panel occurrence would be taken throughout each floor.

2.2.3 Doors and Windows

Doors would be inspected adjacent to the door furniture and if visible, a sample of the internal lining would be taken where exposed. For Refurbishment and Demolition Surveys, it is not reasonably practicable to remove all door and window frames, only a random representative selection will be removed to ascertain if there are any hidden asbestos packers or spacers in existence.

2.2.4 Floor Tiles

One sample of each obvious type of vinyl and colour floor tile. Should it be deemed that all floor tiles are the same then one sample per 25 m² sections would be sufficient.

2.2.5 Gaskets

One sample of each type of gasket was recommended.

2.2.6 Bitumen Products

The variation between each type of bitumen product is not uncommon therefore, for example, one sample of each bitumastic under sink was required.

2.2.7 Textured Coating

A 5cm² sample will be taken from 2 locations in the same room, both samples will be scrapped into one sample bag. Within larger buildings or areas more samples may be required. If the textured coating can be positively confirmed to be of the same batch and applied at the same time then samples may be cross referenced up to a maximum of 3 rooms. Textured coating must never be cross referenced to another sample between different floors.

2.2.8 Cement Products

Cement products e.g. corrugated roofs, rain water goods etc. tend to be uniform, therefore for a large scale roof a maximum of 4 samples would be deemed sufficient. Samples should be taken by carefully removing pieces of approximately 5 cm². If panels are visibly different a sample from each different panel should be taken separately. Any other cement product should have a representative sample from each type.

2.2.9 Sprayed Coating

Different mixtures containing different materials may have been used in different areas and layers. Material may also have been removed, repaired or patched at various times. Samples would be taken by carefully removing pieces of approximately 5 cm², where the material appears uniform and consistent, two samples should usually be enough if taken at either end of the sprayed surface in installations exceeding 100m², one sample per 25-35 m². At least one sample would be taken from each patched area. Care would be taken to include all layers of sprayed coating through to the covered surface.

2.2.10 Lagging

The number of samples would depend on the intended treatment. If the entire boiler house has to be stripped, then it was probably only necessary to prove that one sample contains asbestos. In general one sample should be taken per 3m run of pipe with particular attention paid to different layers and functional items (valves etc.). For long runs of pipe, eg > 20m, one sample per 6m item will usually be enough. If only a small part of the lagging was evidently asbestos, then it would have been necessary to inspect all branches of the pipework with particular attention to damaged/repaired lagging and extensions to the system.

Fibreglass lagging can be often found on straight portions of pipe runs, but the bends may be wound with asbestos chrysotile rope or packed with an asbestos composite insulation.

3.0 SURVEY STRATEGY

3.1 Visual Inspection and Sampling

3.1.1 The site survey and report has been undertaken in accordance with the latest version of **HSG 264: Asbestos: The Survey Guide** incorporating our procedures accredited by UKAS for surveying. A strategy has been established to keep to a minimum, the number of bulk/dust samples taken for analysis and hence minimise the cost of the survey. The strategy employed a combination of visual inspection and sampling of bulk materials thus:

3.1.2 Where the surveyor suspected a material containing asbestos, a bulk sample was taken for analysis. In areas where there were substantial quantities of visually uniform materials, then a small number of samples were taken as being representative of the whole area. Because of this strategy, the client must interpret the results such that where asbestos is detected in a material (such as board or beam cladding) then all visually similar material in the same area must be assumed to contain asbestos.

3.1.3 Where the surveyor reports a material as **non asbestos** by visual inspection and with no analysis of samples (e.g. recently lagged pipework covered with metal cladding) then the client must exercise caution in interpreting the results. It is IMPORTANT to stress that in such circumstances, it is possible that there are residues of asbestos trapped under the newly applied lagging (e.g. from poor quality stripping methods carried out at some time in the past).

It is not practicable to detect such residues until substantial disturbance of the material takes place, e.g. during major alterations, and Environtec cannot accept liability for the detection of such residues in this survey. If the client undertakes major alterations in a specific area where it is possible that residual asbestos may be found, we recommend that a further investigation of the specific area be carried out before starting any works.

3.1.4 Where there are large numbers of identical items distributed in numerous locations throughout the site, e.g. cement flue pipes, oven door seals etc., a single analysis will have been carried out by the surveyor and the client must assume that all identical items have the same composition as the one specified.

3.1.5 Where a 'NO ACCESS' is used, it indicates that the area specified was not accessible to the Surveyor at the time of the survey, either because of locked rooms or because to gain entry, would require an unreasonable degree of dismantling of the structure of the building. The client is advised to be alert to the possibility of there being asbestos materials in such areas. If access is not possible to a room or area this will default to No Access - Presumed Asbestos.

4.0 PRIORITY RATING/RISK ASSESSMENT

- 4.1 For ease of reference of this report and easy use where asbestos bearing material has been identified a priority rating system has been implemented based on condition, which will allow the client the opportunity to plan any requirement for the remedial action and expenditure. This system operates as follows:
- 4.2 A priority rating has been assigned to each sample taken and is based on a method of summarising the surveyor's estimate of the condition of the material examined. It is included to assist the client in determining priorities when drawing up a programme of action for asbestos abatement, however, it must be stressed that priorities for action must be drawn up using the priority together with a consideration of the location of the material and any work methods and schedules which may result in disturbance of the material. To assist, a material risk assessment score has been applied to each sample based on the likelihood of asbestos fibres being released into the breathing zone of persons at risk. A single example can be used to illustrate this point; a partition consisting of asbestos insulating board containing amosite observed at the time of the survey to be in good physical condition with no breaks or abrasions would be given a priority rating of **Low**, i.e. low hazard not requiring urgent attention. If the location of the board is such that it is not subjected to impact or abrasions by normal work activities then the priority for action is also low. The priority would, of course, change to priority **High** if it is decided to carry out works such as upgrading, which would require substantial disturbance of the material.
- 4.3 To summarise, the priority assessment is also the priority for action in cases where the material remains undisturbed through normal work activities. Changes in priorities can be assessed only by the client's representative on site in the light of planned or unscheduled maintenance requirements or changes in normal working patterns as they arise.
- 4.4 The priorities are defined as follows:
- 4.5 **No priority has been assigned - for a material where no asbestos has been detected.**
- 4.6 **VERY LOW (Score 9 or lower)** - indicates a composite asbestos material which has a very low potential to release asbestos fibres in its normal occupation unless damage occurs.
- 4.7 **LOW (Score 10-12)** - indicates a more friable material that contains asbestos but is in a condition and/or location which does not give rise to a significant health risk, **PROVIDED IT REMAINS UNDISTURBED** either by routine maintenance or by personnel carrying out routine daily work activities which could cause impact or abrasion of the material. Priority **Low** is valid as a priority rating only if this proviso is maintained. Minor remedial action such as very minor encapsulation may be required in order that the material may remain in-situ. Clients are advised to be alert to any changes in work activities in areas where priority **Low** material is located. Permit to work scheme must be operated ensuring contractors, building occupants and maintenance operatives who need to know about asbestos are effectively alerted to its presence before undertaking any works in the area.
- 4.8 **MEDIUM (Score 13-15)** - indicates the material contains asbestos and is in a location and/or condition which requires some remedial action. The remedial action may be relatively simple such as applying a sealant coat to the surfaces of boards. Priority **Medium** materials may be encapsulated by appropriate remedial action but it is recommended that they be stripped or cleaned as appropriate as soon as resources become available.

4.9 **HIGH (Score =16)** - indicates materials which contain asbestos and which are in a condition and/or location which requires urgent attention. Priority **High** materials are usually not suited to any form of containment programme and should be stripped or cleaned as appropriate as soon as possible.

4.10 Material Assessment Algorithm (MA)

Each of the parameters given below are assessed during material risk assessment.

Variable	Score	Examples
Product type* (or debris from product)	1 (Low)	Composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, paints, decorative finishes, cement, textured coating etc.
	2 (Medium)	AIB, textiles, gaskets, ropes paper etc.
	3 (High)	Lagging, spray coatings, loose asbestos etc.
Surface Treatment*	0	Non-friable composite asbestos/ reinforced plastics, resins, vinyl tiles, textured coating
	1 (Low)	Enclosed sprays/ lagging/ AIB encapsulated/ asbestos cement
	2 (Medium)	Bare AIB or encapsulated lagging/ spray material/ rope
	3 (High)	Unsealed lagging/ spray material
Extent of damage*	0 (None)	Good condition / No visible damage
	1 (Low)	Low Damage-Few scratches/ marks, broken edges etc.
	2 (Medium)	Medium Damage- Significant breakage of non-friable materials or several small areas of damage to friable material
	3 (High)	High damage/ visible debris.
Asbestos Type*	0	No asbestos detected.
	1	Chrysotile
	2	Amphibole asbestos excluding Crocidolite.
	3	Crocidolite.

The Material Assessment score is calculated by adding the parameters above and the potential for releasing fibres assigned as detailed below.

Material Assessment Score	Fibre Release Potential
10 or higher	High
7 - 9	Medium
5 - 6	Low
4 or lower	Very Low

4.11 Priority Assessment Algorithm (PA)

Unless specifically requested Environtec will not use the HSG227 Comprehensive Guide to Managing Asbestos in Buildings as this was designed for the duty holder to complete as the knowledge required is outside the surveyors scope. Environtec have designed a bespoke Priority Assessment which allows the surveyor to populate based on the site conditions encountered at the time of the survey. Each of the parameters given below are assessed during priority risk assessment.

Variable	Score	Examples
Vulnerability to damage ✓	0	Rare disturbance activity - Only during structural alteration.
	1	Low disturbance activity - Office type activity
	2	Periodic disturbance activity - e.g. Industrial or vehicular activity which may contact ACMs.
	3	High levels of disturbance - e.g. Fire door with A.I.B. sheet in constant use
Extent ✓	0	Small amounts or items (e.g. strings, gaskets)
	1	= 10 m ² / pipe run
	2	> 10 - 50 m ² / pipe run
	3	> 50 m ² / pipe run
Location ✓	0	External
	1	Internal
	2	Heating - Boiler Rooms
	3	Air Conditioning
Number of occupants ✓	0	None
	1	1 - 3
	2	4 - 10
	3	> 10

Priority Assessment + Material Assessment Score	Total Risk Assessment (Priority Rating)
= 16	High
13 - 15	Medium
10 - 12	Low
9 or lower	Very Low

The total risk assessment score is calculated by adding the priority assessment and material assessment score.

- 4.12 We have assigned a priority rating in accordance with the algorithm. The priority rating risk assessment is established by adding the material assessment and priority assessment to provide a total risk assessment score.
- 4.13 The Risk Assessment Algorithm is purely guidance to establishing a priority rating which can be adapted to allow for other factors. The survey shall take into account other parameters making adjustment to the priority rating as required to ensure the priority rating is appropriate.
- 4.14 To minimise the risk of exposure to fibres and damage to decorations or fabric, not all asbestos containing materials were sampled. Some were strongly presumed or presumed to contain asbestos.

"Strongly presumed" is where the surveyor has confirmed by Laboratory Analysis the presence of asbestos or non asbestos in a material and the surveyor has used this information by extrapolating the results for the material of similar construction. Also this terminology will be used where asbestos has been known to have been commonly used in manufacturing and where access restricts the possibility of sampling e.g. corrugated cement roofs, undercloaking.

"Presumed" asbestos is a **default situation** where there is insufficient evidence to confirm that it is asbestos free i.e. where there is no samples taken during a survey as requested by the client or where an area cannot be inspected or accessed. In both cases the areas must be presumed to contain asbestos unless there is strong evidence to prove otherwise.

"Presumed" or "Strongly presumed" asbestos containing materials are scored as Crocidolite (3) unless analysis of similar samples from the building shows a different asbestos type.

- 4.15 The priority assigned to a specific material to remain in-situ is representative and transient, hence, routine periodic audits must be conducted to reassess the condition on a regular basis at least annually or sooner if there is a particular concern or problem highlighted.
- 4.16 A safe system of work scheme must be operated ensuring contractors, building occupants and maintenance operatives who need to know about asbestos are effectively alerted to its presence before undertaking any works in the area.

4.17 **Management Plan**

A management plan should be developed based on this risk assessment. The management plan may include the following :-

- Clean up debris
- Repair
- Encapsulate
- Enclosed
- Remove
- Maintain and update log of asbestos containing materials
- Monitor condition
- Restrict access
- Label or colour code
- Inform
- Train
- Define safe systems of work
- Operate a permit to work system

To manage the risk effectively you will need to:

- Keep and maintain an up to date record of the location, condition, maintenance and removal of all asbestos materials on your premises
- Repair, seal or remove if there is a risk of exposure
- Maintain in a good state of repair and regularly monitor the condition
- Inform anyone likely to disturb asbestos of its location and condition
- Have arrangements in place so that work which disturbs asbestos complies with the Control of Asbestos Regulations (CAR)
- Review the plan at regular intervals and update if circumstances change

4.18 Generally, work with asbestos insulation, insulating board and spray coating **must not** be carried out without a licence from the HSE although there are exceptions for very minor works - more information is available in Managing and working with asbestos Control of Asbestos Regulations 2012 Approved Code of Practice and guidance L143 (Second edition) Published 2013. As a general guideline, work on these materials should be carried out inside full enclosures incorporating negative pressure and decontamination facilities although minor works may be carried out in accordance with the "*Asbestos Essentials Task Manual*" (HSG210).

4.19 The removal of asbestos insulation, insulating board and spray coating is subject to a statutory 14 day notification to the Health and Safety Executive. The notification period is a condition of the removal contractor's licence. Note, also there may be additional restrictions placed on a licence at the discretion of the HSE.

4.20 Following the introduction of The *Hazardous Waste (England & Wales) Regulations 2005 as amended by the Hazardous Waste (England & Wales) Regulations 2009*, all materials with an asbestos content greater than 0.1% by weight - including asbestos cement where applicable - are now classified as a Hazardous Waste and must be disposed of at a site licensed to accept such waste. An appropriate consignment note is also required.

4.21 Although not a legal requirement, it is recommended that a licensed asbestos contractor is engaged for any work with asbestos - including cement products - to ensure full compliance with all current legislation.

5.0 UKAS

5.1 In accordance with current legislation as of August 1999, as an employer, you must only engage laboratories to carry out air monitoring, clearance sampling and analysis who can demonstrate that they conform to *European Standard ISO 17025* by accreditation with a recognised accreditation body.

5.2 Envirotec Ltd are accredited by *UKAS (United Kingdom Accreditation Service)* for fibre counting, clearance sampling, bulk sampling and bulk analysis (**Testing 2030**) thereby assuring our audit system, quality system, calibration and testing operations are in compliance with the relevant requirements and are regularly assessed both internally and externally. Envirotec Ltd is a UKAS accredited inspection body for asbestos surveying in complying with the standard *ISO 17020 (Inspection 197)*.

5.3 Envirotec Ltd has a wealth of experience and knowledge to ensure maximum standards are maintained and that the reporting to the client is of the highest quality achievable. Views and interpretations expressed within the content of this report are outside the scope of UKAS.

6.0 AIR SAMPLE ANALYSIS RESULTS

- 6.1 If required, air tests were taken in accordance with **HSG 248** and our UKAS accreditation for fibre counting and sampling. Air test filters were cleared using acetone/triacetin and read using phase contrast microscopy.
Environtec Ltd are participants, with current satisfactory performance in the RICE scheme (The Regular Inter-Laboratory Counting Exchange), which formally established in 1984 as the UK National Proficiency Testing Scheme for laboratories using the membrane filter method.

7.0 DISCLAIMER

- 7.1 This consultancy contract was completed by Environtec Ltd on the basis of a defined programme of work and terms and conditions agreed with the Client. This report was compiled with all reasonable care and attention, bearing in mind the project objectives, the agreed scope of works, prevailing site conditions and the degree of manpower and resources allocated to the project, as agreed.
- 7.2 Environtec Ltd cannot accept responsibility to any parties whatsoever, following the issue of this report, for any matters arising which may be considered outside of the agreed scope of works.
- 7.3 This report is issued in confidence to the client and Environtec Ltd cannot accept responsibility to any third parties to whom this report may be circulated, in part or in full, and any such parties rely on the contents of the report solely at their own risk.

The measurements given within this report for all sampled asbestos/non asbestos materials are approximations only. Environtec Ltd cannot accept responsibility for discrepancies on these measurements. Any future asbestos removal projects should be priced on the basis that the material has been accurately measured by the removing party themselves

8.0 CONCLUSION

8.1 General

- 8.1.1 Where asbestos materials have been positively identified to this property remedial action may be required to be completed to render them safe. Some asbestos materials may remain in-situ in their present condition to fulfil their life expectancy, providing they remain undisturbed and undamaged.
- 8.1.2 Careful consideration must be given to all maintenance and associated operations that will or are likely to disturb any asbestos bearing materials that remain in-situ.
- 8.1.3 It must be noted that demolition works prior to refurbishment or similar may expose asbestos materials that were physically and visually impossible to locate and identify within the restraints of this survey. Caution should therefore always be adopted where there is a question of doubt.
- 8.1.4 Caution must therefore be adopted when maintenance works are conducted, should any suspect materials be revealed then the works must stop immediately and expert advice sought.
- 8.1.5 The test results set out within the appendices show the nature and condition of the asbestos present in the building. Should the building be programmed for major demolition and redevelopment works all asbestos materials positively identified must be removed under controlled conditions by a hazardous licensed asbestos removal contractor and disposed of as hazardous waste, prior to the commencement of such works.

9.0 RECOMMENDATIONS

- 9.1.1 This survey report and recommendations detailed shall form part of the asbestos management plan in accordance with *regulation 4 of the (CAR 2012)*.
- 9.1.2 To comply with and ensure that the requirements of *The Control of Asbestos Regulations 2012 and the Approved Code of Practice L143 Managing and Working with Asbestos, and Guidance, Health and Safety at Work Act 1974, The Management of the Health & Safety at Work Regulations 1999 and Construction (Design and Management) Regulations 2015*. It is proposed and recommended that the following are implemented and actioned:-
- 9.1.3 That access and disturbance to all areas containing loose or substantially damaged/ deteriorated asbestos materials with a priority **High** be restricted immediately.
- 9.1.4 That all asbestos materials listed under priority **High** be the subject of removal/ remedial action to be implemented immediately to render them safe. This action to include all necessary environmental decontamination and cleaning as necessary.
- 9.1.5 That those items listed under priority **Medium** which are vulnerable to damage be removed and replaced with a non-asbestos substitute or if the ACM is not vulnerable to damage then the ACM must be encapsulated within 12 months of the date of this report.
- 9.1.6 That all individual recommendations relating to ACM occurrences listed within the asbestos register are implemented within 12 months or sooner of the date of this report, depending on the individual circumstances. The prefix word "Programme for removal" shall indicate a less urgent ACM occurrence that requires remedial action to be implemented at a later date depending upon

budget restraints.

- 9.1.7 That those items listed under priority **Low/Very Low** may remain in situ unless there is a high vulnerability to damage and/or disturbance as a result of routine occupational activity or maintenance/refurbishment.
- 9.1.8 That all asbestos containing materials that are to remain in place are clearly labelled with statutory warning labels. Labelling of ACMs that are in good condition and may remain in-situ is purely a recommendation. We appreciate in certain circumstances asbestos can be an emotive subject and labelling of asbestos may draw unwanted attention to the said material. Other warning systems can be applied to the ACMs for example a colour coding and/or permit to work scheme should be operated ensuring contractors, building occupants and maintenance operatives who need to know about asbestos are effectively alerted to its presence before undertaking any works in the area. Environtec Ltd can provide full details of a comprehensive permit to work scheme upon request.
- 9.1.9 Consideration should be given to future proposed refurbishment work and the asbestos removal abatement works programmed in to take advantage of that opportunity. If during refurbishment of a building it becomes necessary for asbestos materials to be worked upon or disturbed in any way there is a requirement under the **CAR 2012** to carry out a risk assessment.
- 9.1.10 That all removal, encapsulation and abatement works are undertaken and completed in compliance with a detailed specification and method statement for asbestos works.
- 9.1.11 That where asbestos materials are to remain insitu then regular, at least annual periodic audit inspections are carried out to monitor and maintain the condition of the asbestos materials such that the risks to health are reduced to the minimum possible so far as is reasonably practicable.
- 9.1.12 That those employed in management positions directly or indirectly having control of the building (duty holder) and/or any works within these premises are made fully aware of this report and all asbestos materials identified. Those management have a responsibility to provide awareness training for all personnel, site and office based.
- 9.1.13 Those who have repair and maintenance responsibilities for the premises because of a contract or tenancy or those in control of the premises if no such contract or tenancy exists are the "duty holder". The duty holder shall adopt all liabilities for management of ACMs.
- 9.1.14 That all contractors and those who visit site to undertake any works be notified and made aware of this report and that asbestos materials are present prior to the undertaking of such works to enable suitable precautionary actions to maintain and reduce the risk to health.
- 9.1.15 That asbestos airborne fibre monitoring is considered to all areas where asbestos materials have been listed under priority **High or Medium** which are programmed for removal at a later date, to identify if airborne fibres are being generated under prevailing conditions. It is considered that this monitoring exercise will act as a reassurance confirmation as it is not expected that airborne fibres will be generated.
This monitoring should be maintained periodically until the said asbestos materials are made safe by removal or abatement works.
- 9.1.16 That all asbestos removal/abatement works are undertaken by a licensed asbestos removal contractor under the direct supervision of Environtec Ltd appointed by the client and that all analytical attendance and monitoring be completed by Environtec Ltd in accordance with our

UKAS accreditation.

- 9.1.17 That competitive quotations/tendering procedures are employed to achieve the most economically favourable costings and programme.

10.0 CLIENT OPTIONS

- 10.1 Environtec Limited, on the basis of the survey report can assist the duty holder in compiling a detailed asbestos management plan and asbestos policy on behalf of the client which shall incorporate involve asbestos remedial works. If necessary, together with future updates to the register, asbestos awareness training together with our comprehensive popular permit to work scheme.
- 10.2 Environtec Ltd can also undertake periodic inspections/re-surveys of premises on behalf of clients to assess in-situ asbestos containing materials and inspect areas originally omitted from the survey with the purpose of updating the asbestos register especially when remedial works or maintenance works take place. The register shall be issued with updates on a regular basis one copy to the client and one for the premises.
- 10.3 Where remedial works are identified, Environtec Ltd under CDM Regulations 2015 can act as the designer and can prepare a detailed specification or method statement for the safe removal/containment and any decontamination of all asbestos identified. The specification will encompass all current legislation, extent of works and any site restrictions.
- 10.4 The works can be programmed to progress in phases in order to keep staff disturbance to a minimum. All works to be managed and monitored by Environtec Limited who will provide all necessary certification upon successful completion of the works.
- 10.5 Environtec Limited have been involved as Project Managers on asbestos projects can also act as Principal Designers or Principal Contractors under the CDM Regulations 2015 for clients , and as such, have compiled a list of reputable Licensed Asbestos Contractors. The contractors are familiar with our Specification and are usually selected for their particular experience or location to the particular site.
- 10.6 Returned tenders will be vetted by Environtec Limited to ensure that contractors have demonstrated a thorough understanding of the proposed works and provided all necessary supporting information. From the details returned, a recommendation will be made of the most suitable tender received. The tenderers and recommendations will be submitted to the client in the form of a tender summary report.
- 10.7 Budget prices based on our knowledge and experience in the industry can be prepared if requested.
- 10.8 The client should consider undertaking asbestos surveys of other properties under their control and management to formulate and generate an asbestos risk register for their portfolio of buildings so that the asbestos can be effectively controlled and managed. This should be undertaken prior to future projects enabling the client to account for any additional costs/timescale additions necessary on such projects as well as locating previously unidentified asbestos material. Current legislation has placed a statutory obligation on the duty holder to manage ACMs in non-domestic premises. The asbestos register will form part of the management plan. It is a requirement that all properties controlled by the duty holder have a management plan that incorporates an asbestos register.

10.9 Environtec Ltd can provide a computer web-based portal database system so that asbestos risk registers for various buildings can be properly managed and updated accordingly incorporating current legislation.

11.0 REGULATIONS ON ASBESTOS IN BUILDINGS

11.1 General

11.1.1 Prior to any work involving the disturbance or removal of asbestos containing materials, points that must be noted:

In accordance with the , **The Control of Asbestos Regulations 2012 Approved Code of Practice L143 Managing and working with asbestos and guidance**, all work with asbestos falls within the scope of the Code of Practice and guidance therein. In general terms, if the code applies, various provisions and regulations have to be complied with. Although failure to observe any provision of this code is not in itself an offence, that failure may be taken by a court in criminal proceedings as proof that a person has contravened a regulation to which the provision relates.

11.1.2 The Control of Asbestos Regulations 2012 Approved Code of Practice and guidance is aimed at those who have repair and maintenance responsibilities for non-domestic premises.

11.1.3 Definitions

a) Control Limits: The single control limit for all asbestos types is 0.1 fibres per cubic centimetre averaged over a continuous 4 hour period.

For further reference, please refer to the following Guidance Notes:-

1) **HSG248 - Asbestos: The analyst's guide for sampling, analysis & clearance procedures**, published by the Health and Safety Executive.

11.1.4 Every effort has been made to identify all asbestos materials so far, as was reasonably practical to do so within the scope of the survey and the attached report. Methods used to carry out the survey were agreed with the client prior to any works being commenced.

Survey techniques used involves trained and experienced surveyors using the combined approach with regard to visual examination and necessary bulk sampling. It is always possible after a survey that asbestos based materials of one sort or another may remain in the property or area covered by that survey, this could be due to various reasons:

- Asbestos materials existing within areas not specifically covered by this report are therefore outside the scope of the survey.
- Materials may be hidden or obscured by other items or cover finishes i.e. paint, over boarding, disguising etc. where this is the case then its detection will be impaired.
- Asbestos may well be hidden as part of the structure to a building and not visible until the structure is dismantled at a later date.
- Debris from previous asbestos removal projects may well be present, these may have not been discovered in some areas as they are in insufficient quantities to be detected. All good intentions are made for its discovery in keeping with the required sampling and inspection frequency in HSG 264.
- Where an area has been previously stripped of asbestos i.e. plant rooms, ducts etc. and new coverings added, it must be pointed out that asbestos removal techniques have improved steadily over the years since its introduction. Most notably would be the Control of Asbestos at Work Regulations (1987) or other similar subsequent regulations laying down certain enforceable guidelines. Asbestos removal prior to this regulation would not be of today's standard and

therefore debris may be present below new coverings.

- This survey will detail all areas accessed and all samples taken, where an area is not covered by this survey it will be due to No Access for one reason or another i.e. working operatives, sensitive location or just simply no access. It may have been necessary for the limits of the surveyor's authority to be confirmed prior to the survey.
- Access for the survey may be restricted for many reasons beyond our control such as height, inconvenience to others, immovable obstacles or confined space. Where electrical equipment is present and presumed in the way of the survey no access will be attempted until proof of its safe state is given. Our operatives have a duty of care under the Health and Safety at Work act (1974) for both themselves and others.
- In the building where asbestos has been located and it is clear that not all areas have been investigated, any material that is found to be suspicious and not detailed as part of the survey should be treated with caution and sampled accordingly.
- Certain materials contain asbestos to varying degrees and some may be less densely contaminated at certain locations (textured coating for example). Where this is the case the sample taken may not be representative of the whole product throughout.
- Where a survey is carried out under the guidance of the owner of the property, or his representative, then the survey will be as per his instructions and guidance at that time.
- Environtec Limited cannot accept any liability for loss, injury, damage or penalty issues due to errors or omissions within this report. Environtec Limited cannot be held responsible for any damage caused as part of this survey carried out on your behalf. Due to the nature and necessity of sampling for asbestos some damage is unavoidable and will be limited to just that necessary for the taking of the sample.

As a general guide:

- a) Asbestos materials which are sound, undamaged and not releasing dusts, should not be disturbed unless for refurbishment works and then, all necessary precautions must be taken and in accordance with Managing and working with asbestos, The Control of Asbestos Regulations 2012 Approved Code of Practice and guidance.
- b) Those activities that are likely to produce a release of asbestos dust should be avoided as far as possible.
- c) The concentration of airborne asbestos in occupied areas should be reduced to the lowest, reasonably practicable level.

11.2 Specific

11.2.1 **Section 2(d) of the Health and Safety at Work Act 1974 (Chapter 37)**, places a general duty on employers to:

'So far as is reasonably practicable as regards any place of work under the employers control, the maintenance of it in a condition that is safe and without risk to health, and adequate as regards facilities and arrangement for their welfare at work'.

Section 3 of the Act places general duties on employers and the self employed persons other than their employees:

'It shall be the duty of every employer to conduct his undertaking in such a way to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected, thereby are not exposed to such risks to their health or safety'.

Section 4 places general duties on persons concerned with premises to persons other than their employees in non-domestic premises:

'... to take such measures as it is reasonably practicable, that the premises, and any plant or substance in the premises or, as the case may be, provided for use there, is or are safe and

without risk to health'.

11.2.2 The ***Control of Asbestos Regulations 2012 (CAR)*** requires employers to prevent the exposure of employees to asbestos. If this is not reasonably practicable the law says their exposure should be controlled to the lowest possible level. Before any work with asbestos is carried out, the Regulations require employers to make an assessment of the likely exposure of employees to asbestos dust. The assessment should include a description of the precautions that are to be taken to control dust release and to protect workers and others who may be affected by that work. If you are employing a contractor to work in your building make sure that either the work will not lead to asbestos exposures or that they have carried out this assessment and identified work practices to reduce exposures.

11.2.3 The ***Construction (Design and Management) Regulations 2015*** applies to all construction, maintenance, refurbishment and demolition projects irrespective of the size . The Regulations states that:

"construction work" ... includes:

- (a) de-commissioning, demolition or dismantling of a structure;
- (d) the removal of a structure, or of any product or waste resulting from demolition or dismantling of a structure:

There are five defined roles as part of the CM 2015 Regulations

1. The Client
2. Principal Designer (replaces the old CDM Coordinator)
3. Designer
4. Principal Contractor
5. Contractor

The main changes surround the Client and the new Principal Designer role. However, despite remaining largely unchanged the Designer might have the biggest impact on asbestos projects.

Client

CDM 2015 takes implied responsibilities from the 2007 regs and adds liability significant phrases such as 'must' and 'ensure'. The main changes are as follows:

- Ensure sufficient time for the project
- Ensure that a Construction Phase Plan and H&S File are created
- Provide pre-construction information to every Designer and Contractor
- Ensure arrangements for managing a project are in place and are maintained
- Ensure the project is completed (so far as reasonably practicable) without risk to any person affected by the project
- 'Reasonable steps' are taken to ensure that the Principal Contractor and Principal Designer fulfil their duties
- If the Client does not feel competent - they must obtain competent advice
- Where there is more than one contractor, the Client must appoint a Principal Designer and Principal Contractor (in writing) - or assume all of those duties as well!

With the exception of domestic clients**, the regs therefore no longer make the allowance that Clients don't know what to do and now insist that they must, or employ competent advice so that they can.

** Note the duties of domestic clients are assumed by the Principal Contractor or in the case of very small jobs, the single Contractor.

Designers

Whilst this is not a new role and the duties are not tremendously different from before, it is worth understanding who a designer is and what duties they are committing to when they take it on. The regs tell us a Designer is an organisation or individual who prepare or modify a design for a construction project (including the design of temporary works) It goes on to say this includes, writing specifications, project management, drawings and anyone that design and modify work are included. It is therefore clear that the familiar role asbestos consultancies take on - is unarguably that of a designer.

The following key duty is therefore assumed by anyone in the role:

Must identify foreseeable risks to health and safety and apply the principles of prevention (avoid, reduce or where you can't, control)

... identify foreseeable risks... , Environtec Ltd fully understands the issues presented by an asbestos job, our industry is often guilty of being blinkered to the host of other hazards that surround it. Therefore when specifying a removal technique, the Environtec Ltd Designer will consider all Health and Safety issues associated with the project

The Principals (Designers and Contractors)

Any project that involves more than one contractor e.g. LARC, Scaffolder, Electrician (for isolations) etc... must have both a Principal Contractor (PC) and a Principal Designer (PD). If the Client fails to appoint them, they assume the duties.

The two main changes for the PC is that the notification bar is higher. A project now needs to be notified if > 500 person days or if >30 working days AND >20 workers at any one time. The HSE believe this will halve the number of projects to be notified.

However a Construction Phase Plan is now needed on ALL projects, not just notified ones. The significance of this on asbestos projects where the LARC is the PC or sole Contractor is that they must produce a Construction Phase Plan (CPP) as well as their method statement. For the small removal project most of the detail required in a CPP is already present in a good quality method Statement.

The PD is the new role on the block, replaces the old CDM Coordinator, takes on all of those duties and more. The duties are:

- Coordinating the Pre-Construction phase
- Identify and remove / control foreseeable risks
- Ensuring co-ordination and co-operation of all team members
- Assist the Client with Pre-Construction Information. The principal designer must help the client bring together the information the client already holds (such as any existing health and safety file or asbestos survey). The principal designer should then:
 - (a) assess the adequacy of existing information to identify any gaps in the information which it is necessary to fill;

- (b) provide advice to the client on how the gaps can be filled and help them in gathering the necessary additional information; and
- Assist the PC in preparing the Construction Phase Plan (now needed on ALL projects)
 - Prepare the Health & Safety File

The role is essentially an organisational one, plus:

- Identifying project risks - perhaps with a full team meeting discussing the project and thrashing out what hazards are to be expected - agreeing how they would be mitigated and assigning responsibility
- Identifying residual risk (for the H&S File) - this will flow from the initial meetings, hazards identified that remain after the job is finished.

11.2.4 Assessment of work which exposes employees to asbestos (as detailed in regulation 6 of the ***Control of Asbestos Regulations 2012***):

The Control of Asbestos Regulations 2012 Approved Code of Practice L143 Managing and working with asbestos, and guidance place strict duties on those who have repair and maintenance responsibilities for premises, because of a contract or tenancy, to manage the risk from asbestos in those premises. Where there is no contract or tenancy the person in control will be the duty holder. There is also a duty of co-operation on other parties under the Approved Code of Practice and guidance.

Who has a duty to Manage asbestos?

A wide range of people potentially have obligations under this regulation, including employers and the self-employed, if they have responsibilities for maintaining or repairing non-domestic premises, and the owner of those premises, whether they are occupied or vacant. In all these cases, regulation 4 of CAR may apply, but the extent of the practical duties will be determined by contractual and other existing legal obligations towards the property.

Specific legal duties under regulation 4 of CAR 2012

The broad requirements on employers and others are to:

- Take reasonable steps to find materials likely to contain asbestos;
- Presume materials contain asbestos, unless there is strong evidence to suppose they do not;
- Assess the risk of the likelihood of anyone being exposed to asbestos from these materials;
- Make a written record of the location and the condition of the ACMs and presumed ACMs and keep it up to date;
- Repair or remove any material the contains or is presumed to contain asbestos, is necessary, because of the likelihood of disturbance, and its location or condition;
- Prepare a plan to manage that risk and put it into effect to ensure that;
- Information on the location and condition of ACMs is given to people who may disturb them;
- any material known or presumed to contain asbestos is kept in a good state of repair;
- Monitor the condition of ACMs and presumed ACMs; and
- Review and monitor the action plan and the arrangements made to put it in place;

11.2.5 Information, Instruction and Training (as detailed in Regulation 10 of CAR 2012):

Every employer shall ensure that adequate information, instruction and training is given to his employees who are liable to be exposed to asbestos so that they are aware of the risks and the

precautions that should be observed.

11.2.6 Use of ***Control Measures (as detailed in Regulation 12 of CAR 2012):***

Every employer who provides personal protective equipment shall ensure that it is properly used. Every employer shall make full and proper use of any personal protective equipment and if he discovers any defect he shall report it to his employer.

11.2.7 Maintenance of ***Control Measures (as detailed in Regulation 13 of CAR 2012):***

Every employer who provides any personal protective equipment shall ensure that it is maintained in a clean and efficient state, in efficient working order and in good repair.

11.2.8 ***Provision and Cleaning of Protective Clothing (as detailed in Regulation 14 of CAR 2012):***

Every employer shall provide adequate and suitable protective clothing for his employees who are exposed to asbestos. The employer shall ensure that any protective clothing provided, is either disposed of as asbestos waste or adequately cleaned.

11.3 **Removal**

11.3.1 When it is not possible to seal an asbestos material effectively and it is likely to release dust, it may be decided to remove it completely. If it is necessary to disturb asbestos materials frequently, for example, for maintenance purposes, the cost of the precautions required may make it more cost effective to replace them. However, it should be recognised that removal often leads to higher short-term dust levels than sealing the material in place, and appropriate precautions must be taken.

Removal may involve complete removal of board or lagging for example, or simply removal of a small vulnerable area from an installation. Temporary repair, sealing or enclosure may be required to render asbestos material safe pending removal. When asbestos fire protection material is removed, it must be immediately replaced with materials having at least an equivalent fire rating.

Removal of sprayed asbestos, lagging and asbestos insulating board should generally be carried out by a Contractor licensed by the Health and Safety Executive (HSE).

Work with materials in which the asbestos fibres are firmly linked in a matrix do not require to be conducted by a licensed contractor. The definition of licensable work is given in paragraph 30 Managing and working with asbestos. The Control of Asbestos Regulations 2012 Approved Code of Practice and guidance, although it is recommended that all such works are undertaken by a licensed contractor.

11.3.2 The ***Control of Asbestos Regulations 2012, entitled 'Asbestos:*** sets down a single control limit for the level of airborne asbestos fibres for all asbestos types, this being 0.1 fibres per cubic centimetre averaged over a continuous 4 hour period.

It should be noted, however, that this level refers to those who would expect to come into contact with asbestos as part of their employment. There are currently no levels set for the general public. However, in terms of non-occupation exposure, airborne fibre levels should be controlled to as low as reasonably practicable. For most practicable purposes, this effectively means less than 0.01 fibres/ml.

Should one wish to disturb this material, the above level must not be exceeded.

11.3.3 Any intended de-contamination/removal work should be undertaken in accordance with a detailed specification.

The specification should include for:-

- a) The continued operational requirements.
- b) The continuation of the current refurbishment works and the following legislation:-
- 1) *The Control of Asbestos Regulations 2012*
 - 2) **L143 Managing and working with asbestos**
 - 3) *Health and Safety at Work etc. Act 1974.*
 - 4) *HSG248: Asbestos: The analysts' guide for the sampling, analysis and clearance procedures.*
 - 5) *Construction (Design and Management) Regulations 2015.*
 - 6) *Control of Substances Hazardous to Health Regulations 2002.*
 - 7) *HSG247 Asbestos: The Licensed Contractors' Guide*
 - 8) *Respiratory Protective Equipment at Work; A Practical Guide HSG53.*
 - 9) *A comprehensive guide to Managing Asbestos in Buildings HSG227.*
 - 10) *HSG 264: Asbestos: The Survey Guide*
 - 11) *Asbestos Essentials Task Manual HSG210.*
 - 12) *The Hazardous Waste (England & Wales) Regulations 2005 as amended by the Hazardous Waste (England & Wales) Regulations 2009*
- c) Further reading:
- *Asbestos MS13.*