

Type 3 Refurbishment/Demolition ASBESTOS SURVEY

At

**C.T.I The Mall
Clonmel,
Tipperary**

Upgrade of water controls in bathrooms



Survey Ref No: 10/16/200 ASB

Prepared by:



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Date of Survey: 18th February 2011

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SECTION 1.0

INTRODUCTION

1.0 INTRODUCTION

- 1.1 This report contains the findings of a **Type 3: Full access sampling and identification survey (pre-demolition / major refurbishment surveys)** carried out at C.T.I, the mall, Clonmel, Co Tipperary by Kevin Kelly of Anderson Williamson on Friday 18th February 2011, acting on the instructions of The Office of Public Works.

The scope of the survey was to locate and report the presence of asbestos containing materials (ACMs) used within the construction of the roofs, walls, ceilings and services of the above buildings; to report on identified asbestos containing materials, indicating condition, asbestos type and content and extent of materials present.

Whilst great care has been taken to ensure that all ACMs have been located and identified, no survey can guarantee that all asbestos present in an area has been uncovered.

The quantifications stated, within this survey report, are based on our Surveyor's estimates and should not be used for contractual purposes.

Samples were only taken where deemed necessary, and where a suspected material appeared to be repeatedly used within an area only a representative number of samples were taken, i.e. insulation boards, sprayed insulation, cement products etc.

When collecting bulk samples, consideration is taken as to the appearance, texture and function of a material and that it may be an asbestos type material.

In order to minimise disturbance and fibre release when collecting samples, these were taken from broken or damaged positions, where this was not possible samples were taken by spraying with water (where possible) containing a sealant solution and carefully cutting or snapping a small piece for sampling purposes.

SECTION 2.0

AREAS ACCESSED

2.0 Areas Accessed

All areas outlined in the scope of the OPW issued order have been accessed.

SECTION 3.0

SUMMARY OF ASBESTOS INCIDENCE

3.0 SUMMARY OF ASBESTOS INCIDENCE

Table 1 below gives a summary of all areas, where an Asbestos Containing Material (ACM) was discovered during this Survey.

Table 1 ~ Recommended Actions for Identified ACM's

Sample Ref. Nr.	Floor	Location	Description	Asbestos Type	Extent / Amount	Recommended Action
S01	Ground	Male Toilets	Toilet Cistern	Amosite	7 No.	Remove
S02	1 st floor	Female Toilets	Toilet cisterns	Amosite	8 No.	Remove

SECTION 4.0

EXPLANATION OF TERMS

4.0 EXPLANATION OF TERMS

Where a Pre-demolition/refurbishment (type 3) Asbestos Survey is to be executed within a building or within a defined area of a building the presumption is that the structure and finishing fabric of that area is to be demolished or to undergo radical intervention works. As such where Asbestos Containing Material, (ACM), is identified the recommendation is automatically for removal irrespective of the type, condition, product type or asbestos type.

To inform the subsequent removal process however an assessment of type, condition, product type accessibility and asbestos type is given.

The method of assessment, which has been adopted, is generally based on Health and Safety Executive publication HSG264: "Asbestos-The Survey Guide".

As part of the process Anderson Williamson Ltd. have developed a reporting mechanism using an asbestos survey form which includes a number of terms that require some form of judgement / response.

An explanation and assessment methodology for the key terms is set out below:

4.1 Accessibility

4.2 Product Type

4.3 Friability

4.4 Asbestos Type

4.5 Amount of Damage / Deterioration

4.6 Priority Assessment

4.1 ACCESSIBILITY

The terminology used for accessibility (accessibility assessment) is based on presumption that if the material can be reached it may be subject to accidental or intentional contact and damage. The range is totally inaccessible, very low, low, medium, and high.

Table 2 Accessibility Terms

Totally Inaccessible	An area where an asbestos containing material has been entombed.
Very Low	Can reach it only with hands (i.e. via a small inspection hatch).
Low	Above a suspended ceiling, below floor or within a service or plant area, loft or cellar, etc.
Medium	Exposed overall, but above head height.
High	Easily accessed, but below head height.

4.2 PRODUCT TYPE

The terminology used for product type will be taken from HSG 264 : Asbestos Containing Materials in Buildings. This will be a feature of the asbestos product, its location and use. For example:

- a) Asbestos insulation board used as a ceiling tile will be reported as Ceiling tile.
- b) Lagging applied to pipework or calorifier will be reported as thermal insulation.

Summary of Appendix 2 in HSG 264: Asbestos Containing Materials in Buildings

Asbestos Product	Location / Use
Loose Insulation Bulk loose fill, bulk fibre-filled mattresses, quilts and blankets. Also 'jiffy bag'-type products used for sound insulation.	Bulk loose fill insulation is now rarely found but may be encountered unexpectedly, eg DIY loft insulation and fire-stop packing around cables between floors. Mattresses and quilts used for thermal insulation of industrial boilers were filled with loose asbestos. Paper bags / sacks were also loose-filled and used for sound insulation under floors and in walls.
Sprayed Coatings Dry applied, wet applied and trowelled finish.	Thermal and anti-condensation insulation on underside of roofs and sometimes sides of industrial buildings and warehouses. Acoustic insulation in theatres, halls. Fire protection on steel and reinforced concrete beams / columns and on underside of floors. Over-spray of target areas is common.
Thermal Insulation Hand-applied thermal lagging, pipe and boiler lagging, pre-formed pipe sections, slabs, blocks. Also tape, rope, corrugated paper, quilts, felts and blankets.	Thermal insulation of pipes, boilers, pressure vessels, calorifiers etc.
Asbestos Boards 'Millboard'	'Millboard' was used for general heat insulation and fire protection. Also used for insulation of electrical equipment and plant.
Insulating board	Used for fire protection, thermal and acoustic insulation, resistance to moisture movement and general building board. Found in service ducts, firebreaks, infill panels, partitions and ceilings (including ceiling tiles), roof underlay, wall linings, external canopies and porch linings.
Insulating board in cores and linings of composite products.	Found in fire doors, cladding infill panels, domestic boiler casings, partition and ceiling panels, oven linings and suspended floor systems. Used as thermal insulation and

	sometimes as acoustic attenuators.
Paper, felt and cardboard	Used for electrical / heat insulation of electrical equipment, wiring and plant. Also used in some air conditioning systems as insulation and acoustic lining. Asbestos paper has also been used to reinforce bitumen and other products and as a facing / lining to flooring products, combustible boards, flame-resistant laminate. Corrugated cardboard has been used for duct and pipe insulation.
Textiles	
Ropes and yarns	Used as lagging on pipes (see above), jointing and packing materials and as heat- / fire-resistant boiler, oven and flue sealing. Caulking in brickwork. Plaited asbestos tubing in electric cable.
Cloth	Thermal insulation and lagging (see above), including fire-resisting blankets, mattresses, and protective curtains, gloves, aprons, overalls etc. Curtains, gloves, etc were sometimes aluminised to reflect heat.
Gaskets and washers	Used in domestic hot water boilers to industrial power and chemical plant.
Strings	Used for sealing hot water radiators.
Friction Products	
Resin-based materials	Transport, machinery and lifts, used for brakes and clutch plates.
Drive belts/conveyor belts	Engines, conveyors.
Cement Products	
Profiled sheets	Roofing, wall cladding. Permanent shuttering, cooling tower elements.
Semi-compressed flat sheet and partition board.	Partitioning in farm buildings and infill panels for housing, shuttering in industrial buildings, decorative panels for facings, bath panels, soffits, linings to walls and ceilings, portable buildings, propagation beds in horticulture, domestic structural uses, fire surrounds, composite panels for fire protection, weather boarding.
Fully compressed flat sheet used for tiles, slates, and board.	As above but where stronger materials are required and as cladding, decking and roof slates (eg roller-skating rinks, laboratory worktops).
Pre-formed moulded products and extruded products.	Cable troughs and conduits. Cisterns and tanks. Drains and sewer pressure pipes. Fencing. Flue pipes. Rainwater goods. Roofing components (fascias, soffits, etc). Ventilators and ducts. Weather boarding. Windowsills and

	boxes, bath panels, draining boards, extracting hoods, copings, promenade tiles etc.
Other Encapsulated Materials	
Textured coatings	Decorative / flexible coatings on walls and ceilings.
Bitumen products	Roofing felts and shingles, semi-rigid asbestos bitumen roofing. Gutter linings and flashings. Bitumen damp-proof courses (dpc). Asbestos / bitumen coatings on metals. (Car body underseals). Bitumen mastics and adhesives (used for floor tiles and wall coverings).
Flooring	Thermoplastic floor tiles. PVC vinyl floor tiles and unbacked PVC flooring. Asbestos paper-backed PVC floors. Magnesium oxychloride flooring used in WCs, staircases and industrial flooring.
Reinforced PVC	Panels and cladding.
Reinforced plastic and resin composites.	Used for toilet cisterns, seats, banisters, window seals, lab bench tops.
	Brakes and clutches in machines.

4.3 FRIABILITY

The methodology adopted to determine the friability of any asbestos containing material is based on the material assessment algorithm found in HSG 264 and is a factor of: product type, extent of damage / deterioration, surface treatment, asbestos type.

Table 3 Material Assessment Algorithm Parameters

Sample Variable	Score	Examples
Product type (or debris from product)	1	Asbestos reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, asbestos cement etc).
	2	Asbestos insulating board, millboard, other low-density insulation boards, asbestos textiles, gaskets, ropes and woven textiles, asbestos paper and felt.
	3	Thermal insulating (pipe and boiler lagging), sprayed asbestos, loose asbestos, asbestos mattresses and packing.
Extent of damage/deterioration	0	Good condition no visible damage.
	1	Low damage, a few scratches or surface marks broken edges on boards/tiles, etc.
	2	Medium damage, significant breakage of materials or several small areas where material has been damaged revealing loose asbestos fibres.
	3	High damage or delamination of material, sprays and thermal insulation. Visible asbestos debris.
Surface Treatment	0	Composite materials containing asbestos reinforced plastics, resins and vinyl tiles.
	1	Enclosed sprays and lagging, AIB (with enforced face painted or encapsulated) asbestos cement sheets etc.
	2	Unsealed AIB or encapsulated lagging or sprays.
	3	Unsealed lagging or sprays.
Asbestos Type	1	Chrysotile
	2	Amosite
	3	Crocidolite

- ☐ Score of 10 or more - high potential to release fibres if disturbed
- ☐ Score 7-9 - medium potential to release fibres if disturbed
- ☐ Score 5-6 - low potential to release fibres if disturbed
- ☐ Less than 4 - very low potential to release fibres if disturbed

4.4 ASBESTOS TYPE

Asbestos is a term used for the fibrous form of several naturally occurring silicate minerals. The three main types of asbestos, which have been commercially used are:

- ☐ Crocidolite - often referred to as blue asbestos
- ☐ Amosite - often referred to as brown asbestos
- ☐ Chrysotile - often referred to as white asbestos

The asbestos type will be determined following analysis by a UKAS accredited body using the methodology outlined in HSG 264.

4.5 AMOUNT OF DAMAGE / DETERIORATION

The terminology used to describe the amount of damage on any material will be good condition, low damage, medium damage, and high damage.

Table 4 Condition Terms

Good Condition	No visible damage
Low Damage	A few scratches or surface marks. Broken edges on boards/tiles, etc.
Medium Damage	Significant breakage of materials or several small areas where material has been damaged revealing loose asbestos fibres.
High Damage	Delamination of material, sprays and thermal insulation. Visual asbestos debris.

4.6 PRIORITY ASSESSMENT

It's worth noting that a high score in the material assessment may not always require a high priority action, for example, if the asbestos material is in an area never entered.

The priority assessment takes into account other issues, these primarily relate to human factors.

The additional factors included in the priority assessment include the following:

- Occupant activity (Primary & Secondary activities/uses)
- Likelihood of disturbance (Location, Extent, Accessibility)
- Human exposure potential (frequency of maintenance on asbestos containing material, average time in area & number of occupants)
- Maintenance activities (Frequency and Type of maintenance)

Each sub-category on the priority assessment is then scored from 0 to 3. An average score is then calculated for each sub-category.

For the priority risk assessments the calculation procedure is that an average score is taken for the sub-headings under the four main categories, which can give a total maximum score for the priority risk assessments of 12. This maximum score is the same as that achievable on the material risk assessment scores and the reason for this is that there is a balance between the priority score and the material assessment score.

Finally, to obtain the actual priority assessment score, the material assessment score must be added to the score from the priority table.

In contrast with the material assessment there is no pre-determined score table to compare the results of the priority assessment to.

Careful consideration of the scores for a number of typical asbestos containing products highlights the difficulty in drawing conclusions from their resultant scores, for example, floor tiles containing Chrysotile asbestos located within an occupied area would score higher than Amosite containing insulating board within a boiler room door. This is primarily a function of location and occupation parameters but conclusions drawn from each score may result in unsuitable or incorrect decisions.

Although the priority score does not refer to an exact management action, it is still important to calculate the value and make reference within the discussion text of the report. This demonstrates that full consideration has been given to every aspect of an asbestos containing material and subsequently the correct management actions can be formulated.

4.6.1 Prioritisation of Removal Works.

Prioritisation of removal works are based on the following priority ratings.

- | | |
|--------------------|---|
| Priority 1: | Asbestos removal works requiring immediate attention. |
| Priority 2: | Asbestos removal works requiring attention within a medium time frame. |
| Priority 3: | No immediate attention required due to its present condition. Remove prior to any works likely to cause disturbance and monitor for signs of deterioration. |
| Priority 4: | No significant risk of fibre release- Remove prior to disturbance works. |

SECTION 5.0

RECOMMENDATIONS

5.0 RECOMMENDATIONS

- 5.1 **Removal: In the case of a Refurbishment and Demolition (Type 3) survey the recommendation is for complete removal of the material under controlled conditions so as to comply with CAR 2006 R.**
- 5.2 Attention is drawn to the requirement that the removal of asbestos materials is subject to a number of statutory provisions including the Safety, Health and Welfare at Work (exposure to asbestos) Regulations 2006 and the Safety Health and Welfare at Work Construction Regulations 2001. It should be noted that licensed asbestos contractors, under the terms of their license, have to notify the relevant authority of their intention to remove such items. Notification of such works is normally subject to a 14-day period, except for unusual or exceptional circumstances when the enforcing authority (the Health & Safety Executive) may grant a waiver if there is immediate risk to health, i.e. an accident.
- 5.3 Prior to removal works commencing a Project Supervisor Design, and a Project Supervision Construction, should be appointed, in writing, to fulfil all the duties provided for in the Regulations. The Project Supervisor Design should make provision for the following at a minimum:
- Preparation of asbestos removal/encapsulation specification/Preliminary S&H Plan.
 - Liaison with contractors
 - Liaison with the Health and Safety Authority
 - Ensuring correct notification etc.
 - Air monitoring during asbestos works
 - Supervision of working, including smoke testing of work enclosures
 - Asbestos site clearance certification
 - Advise on disposal/storage arrangements

SECTION 6.0

ASBESTOS SURVEY REPORT FORMS



ANDERSON WILLIAMSON LTD
Chartered Surveyors & Construction Consultants



Asbestos Survey Report Form

CLIENT: OPW

SITE ADDRESS:

C.T.I
The Mall
Clonmel
Tipperary

SURVEYOR: Kevin Kelly

SURVEY DATE: 18/02/2011

SAMPLE REF NO: S01

FLOOR: Ground

ROOM NAME / NO: Male Toilets

PHOTO:



USE OF MATERIAL:	Toilet Cistern			ACCESSIBILITY ASSESSMENT:			
LOCATION	Male Toilets			EXTENT / QUANTITY:	7 No.		
ASBESTOS TYPE (tick)	NON ASBESTOS	0		EXTENT OF DAMAGE / DETERIORATION (tick)	GOOD CONDITION	0	
	CHRYSTOLITE:	1			LOW DAMAGE	1	✓
	AMOSITE:	2	✓		MEDIUM DAMAGE	2	
	CROCIDOLITE:	3			HIGH DAMAGE	3	
SURFACE TREATMENT (tick)	COMPOSITE MATERIAL	0	✓	FIBRE RELEASE POTENTIAL (tick)	HIGH RISK	10 - 12	
	ENCLOSED SPRAY / LAGGING, PAINTED / ENCAPSULATED AIB, ASBESTOS CEMENT SHEETS	1			MEDIUM RISK	7 - 9	
	UNSEALED AIB OR ENCAPSULATED LAGGING AND SPRAYS	2			LOW RISK	5 - 6	
	UNSEALED LAGGING / SPRAY COATING	3			VERY LOW RISK	1 - 4	✓
PRODUCT TYPE (tick)	ASBESTOS REINFORCED COMPOSITES	1	✓	RECOMMENDED ACTION (tick)	REMOVE		✓
	ASBESTOS INSULATING BOARD, TEXTILES, GASKETS, ROPE, PAPER, FELT	2			REPAIR / SEAL / ENCAPSULATE		
	THERMAL INSULATION, SPRAYED ASBESTOS, LOOSE ASBESTOS	3			LABEL & MANAGE		

OTHER RELEVANT INFORMATION:



ANDERSON WILLIAMSON LTD
Chartered Surveyors & Construction Consultants



Asbestos Survey Report Form

CLIENT: OPW

SITE ADDRESS:

C.T.I
The Mall
Clonmel
Tipperary

SURVEYOR: Kevin Kelly

SURVEY DATE: 18/02/2011

SAMPLE REF NO: S02

FLOOR: Ground

ROOM NAME / NO: Male Toilets

PHOTO:



USE OF MATERIAL:	Toilet Cistern			ACCESSIBILITY ASSESSMENT:			
LOCATION	Female Toilets			EXTENT / QUANTITY:	8 No.		
ASBESTOS TYPE (tick)	NON ASBESTOS	0		EXTENT OF DAMAGE / DETERIORATION (tick)	GOOD CONDITION	0	
	CHRYSTOTILE:	1			LOW DAMAGE	1	✓
	AMOSITE:	2	✓		MEDIUM DAMAGE	2	
	CROCIDOLITE:	3			HIGH DAMAGE	3	
SURFACE TREATMENT (tick)	COMPOSITE MATERIAL	0	✓	FIBRE RELEASE POTENTIAL (tick)	HIGH RISK	10 - 12	
	ENCLOSED SPRAY / LAGGING, PAINTED / ENCAPSULATED AIB, ASBESTOS CEMENT SHEETS	1			MEDIUM RISK	7 - 9	
	UNSEALED AIB OR ENCAPSULATED LAGGING AND SPRAYS	2			LOW RISK	5 - 6	
	UNSEALED LAGGING / SPRAY COATING	3			VERY LOW RISK	1 - 4	✓
PRODUCT TYPE (tick)	ASBESTOS REINFORCED COMPOSITES	1	✓	RECOMMENDED ACTION (tick)	REMOVE		✓
	ASBESTOS INSULATING BOARD, TEXTILES, GASKETS, ROPE, PAPER, FELT	2			REPAIR / SEAL / ENCAPSULATE		
	THERMAL INSULATION, SPRAYED ASBESTOS, LOOSE ASBESTOS	3			LABEL & MANAGE		

OTHER RELEVANT INFORMATION:



ANDERSON WILLIAMSON LTD
Chartered Surveyors & Construction Consultants



Asbestos Survey Report Form

CLIENT: OPW

SITE ADDRESS:

C.T.I
The Mall
Clonmel
Tipperary

SURVEYOR: Kevin Kelly

SURVEY DATE: 18/02/2011

SAMPLE REF NO: S03

FLOOR: Ground

ROOM NAME / NO: Male Toilets

PHOTO:



USE OF MATERIAL:	Toilet Seat			ACCESSIBILITY ASSESSMENT:			
LOCATION	Male Toilets			EXTENT / QUANTITY:	7 No.		
ASBESTOS TYPE (tick)	NON ASBESTOS	0	✓	EXTENT OF DAMAGE / DETERIORATION (tick)	GOOD CONDITION	0	
	CHRYSTOLE:	1			LOW DAMAGE	1	
	AMOSITE:	2			MEDIUM DAMAGE	2	
	CROCIDOLITE:	3			HIGH DAMAGE	3	
SURFACE TREATMENT (tick)	COMPOSITE MATERIAL	0		FIBRE RELEASE POTENTIAL (tick)	HIGH RISK	10 - 12	
	ENCLOSED SPRAY / LAGGING, PAINTED / ENCAPSULATED AIB, ASBESTOS CEMENT SHEETS	1			MEDIUM RISK	7 - 9	
	UNSEALED AIB OR ENCAPSULATED LAGGING AND SPRAYS	2			LOW RISK	5 - 6	
	UNSEALED LAGGING / SPRAY COATING	3			VERY LOW RISK	1 - 4	
PRODUCT TYPE (tick)	ASBESTOS REINFORCED COMPOSITES	1		RECOMMENDED ACTION (tick)	REMOVE		
	ASBESTOS INSULATING BOARD, TEXTILES, GASKETS, ROPE, PAPER, FELT	2			REPAIR / SEAL / ENCAPSULATE		
	THERMAL INSULATION, SPRAYED ASBESTOS, LOOSE ASBESTOS	3			LABEL & MANAGE		

OTHER RELEVANT INFORMATION:

SECTION 7.0

BULK SAMPLE REPORT FORMS

**BULK MATERIAL SAMPLE REPORT**

Reference No: J503657 Project: N/A
 Date Received: 22 Feb 2011 Client Order No: 10.16
 Client Name and Address: Anderson Williamson Ltd, Building 9, Citylink Business Park, Durham Road, Belfast BT12 4HQ
 Site Address: Central Technical Institute, The Mall, Clonmel, Co. Tipperary
 Sampling Officer: Anderson Williamson Ltd
 Date of Analysis: 23 Feb 2011
 Analyst: Helen McGuckin
 Approving Officer: Helen McGuckin Signed: *H. McGuckin*
 Issue Date: 23 Feb 2011

ANALYSIS RESULTS

Sampling carried out by our own officers follows the procedures documented in our internal method M3: The Sampling of Bulk Materials, for Analysis to Determine the Presence of Asbestos. These samples have been analysed in accordance with internal method M2: The Identification of Asbestos, within Bulk Materials, by the Use of Optical Microscopy. Both these internal methods are based on the standard method as outlined in the HSE Document 'Asbestos: The analysts' guide for sampling, analysis and clearance procedures. Any deviations from these standard methods will be recorded in this report. No responsibility is taken for sampling that is not carried out by our own officers. Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation. Any comments regarding percentage content or density determination is outside the scope of our UKAS accreditation. The material classification is the opinion of the analyst, based on the samples' appearance, as received, and may not accurately reflect the source material on site. This report must not be reproduced, except in full, without the written permission of the laboratory. These samples will be retained within this laboratory for a period of six months prior to disposal at a licensed asbestos disposal site, unless the client makes alternative arrangements.

For advice concerning these materials, risk assessments, removal procedures or information regarding the current legislation for work with asbestos containing materials, please contact G & L Consultancy Ltd.

Site Ref	Lab Ref	Description	Analysis Result	Classification
1. S01	NI012308	Male Toilets - Toilet cistern	Amosite	Reinforced Composite
2. S02	NI012309	Female Toilets - Toilet cistern	Amosite	Reinforced Composite
3. S03	NI012310	Male Toilets - Toilet seat	No Asbestos Detected	Not Applicable



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SECTION 8.0

ANNOTATED FLOORPLANS



