

HAZARDOUS BUILDING MATERIALS

SURVEY REPORT

2 & 8A Lee Street, Haymarket
2 & 8A Lee Street
Haymarket NSW 2000

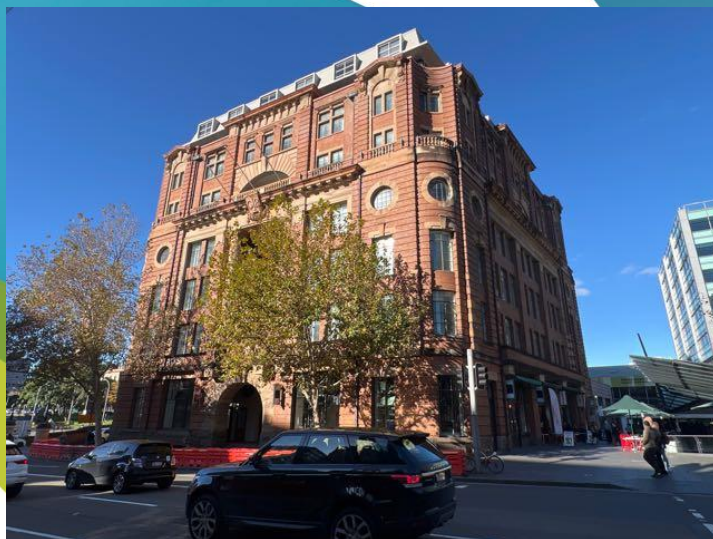
Prepared for:

TOGA

Level 5

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Ultimo NSW 2007



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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Client. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of TOGA. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

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1 Executive Summary

SLR Consulting Australia Pty Ltd (SLR) was engaged by Kelly Pham of TOGA to undertake an inspection of 2 & 8A Lee Street, Haymarket NSW 2000 (herein referred to as the Site). The survey was conducted by Conor Johnston and Andrew Parker from SLR on 01 June 2022.

This Hazardous Building Materials Report has been prepared by Andrew Parker to accompany a detailed State significant development (SSD) development application (DA) for the mixed-use redevelopment proposal at TOGA Central, located at 2 & 8A Lee Street, Haymarket (the site). The site is legally described as Lot 30 in Deposited Plan 880518 and Lot 13 in Deposited Plan 1062447. The site is also described as 'Site C' within the Western Gateway sub-precinct at the Central Precinct.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the SSD DA (SSD 33258337).

The following hazardous building materials were identified.

Asbestos Containing Materials (ACM)

- Internal - 8th Floor, Lift Motor Room - Brake Pads, Friction Material (Assumed)

Lead in Paint

- Internal - Basement, South-western Fire Escape Stairwell - White coloured paint to Columns and Ceiling lining
- Internal - Basement, Throughout - Light Green coloured paint to Vertical Beams
- Internal - Ground Floor, Fire Escape - Cream coloured paint to Wall linings
- Internal - Ground Floor, Shop 2 - Rendered Walls

Lead in Dust

No lead in dust found

Polychlorinated Biphenyls (PCBs) in older style florescent light fittings

- Internal - Basement, Throughout
- Internal - All Floors, Linen Rooms Throughout
- Internal - 7th Floor, Throughout
- Internal - 8th Floor, Throughout

This report concludes that the proposed mixed-use redevelopment is suitable and warrants approval subject to the implementation of the following mitigation measures:

1. ACM identified on-site that do not pose a significant risk to health may remain in situ and be managed with the aid of an asbestos management plan. SLR recommends that asbestos-containing brake pads are confirmed and removed at the next service interval.
2. As required by the *Work Health and Safety Regulations 2017*, the building owner is obliged to comply with the requirements outlined in the Regulation

- a. All ACM at the workplace is identified and maintained in a register of asbestos containing materials;
 - b. All in situ ACM is clearly indicated and labelled;
 - c. Implementation of an Asbestos Management Plan; and
 - d. Ongoing review of the Asbestos Containing Materials Register and Asbestos Management Plan.
3. Elevated levels of lead in paint were identified throughout the site:
- Lead paints found to be in a poor flaking condition should be encapsulated as soon as practicable. All similar applications of this paint should be encapsulated as soon as practicable.
 - Lead paints found to be in either an average or good condition may be managed in situ, provided regular inspections are conducted to assess the condition of the paint.
4. PCB work is to be conducted in accordance with the *Environmental Protection & Heritage Council's Polychlorinated Biphenyls Management Plan, Revised Edition April 2003*. This includes:
- Prior to demolition when the power is disconnected, inspect the light fittings;
 - Metal PCB containing capacitors are to be removed, placed in plastic lined 200 litre drums and disposed of as PCB Scheduled Waste. Any light fittings that show signs of oil staining from capacitors are to be disposed of as PCB contaminated;
 - Protective clothing including eye protection, PCB resistant gloves and overalls are to be worn;
 - Contaminated gloves and disposable coveralls are to be disposed of as PCB contaminated waste; and
 - Contractors licensed to transport and handle PCBs must be used for transport and disposal. PCB is a scheduled waste with strict guidelines regarding transport and handling.

Following the implementation of the above mitigation measures, the remaining impacts are appropriate.

The list above is a summary/overview only and should not be relied on to accurately identify hazardous materials. The locations and details of all items of known hazardous materials at the property are documented in the Hazardous Materials Registers in **Section 6** of this report.

In order to comply with the *Work Health and Safety Regulations 2017* any action taken to control ACM in the place of work, or in plant at the place of work, is to be recorded in the Asbestos Control Log attached in **Appendix A**.

Copies of NATA Laboratory Certificates for asbestos identification analysis are provided in **Appendix B**. Refer to Appendix C for Limitations of this survey. Relevant photographs taken during the inspection are provided in **Appendix D**. Refer to the General Information provided in **Appendix E** of this report for further information pertaining to hazardous materials.

The information provided in this report should not be relied on to accurately identify all hazardous materials at the Site. Hazardous materials may have been concealed i.e. behind new walls, flooring, ceilings, etc. that may have been inaccessible at the time of the inspection. If any hazardous materials are reasonably suspected at the Site, which are not identified within this report, further investigation is recommended by a competent person/s to undertake additional confirmatory inspections and/or sampling and analysis as required.

This report should be read in full including all attachments.

2 Background and Scope

The Scope of Work is to undertake a Hazardous Management Survey for the identification of all in situ hazardous materials at the Site. The extent of the inspection and samples collected for subsequent analysis (where applicable) was completed in order to confirm, as far as reasonably practicable, the location, condition and risk presented by in situ hazardous materials (based on the level of access available at the time of the assessment).

This report has been prepared to accompany a SSD DA for the for the mixed-use redevelopment proposal at TOGA Central, located at 2 & 8A Lee Street, Haymarket.

The Minister for Planning, or their delegate, is the consent authority for the SSD DA and this application is lodged with the NSW Department of Planning and Environment (DPE) for assessment.

The purpose of the SSD DA is to complete the restoration of the heritage-listed building on the site, delivery of new commercial floorspace and public realm improvements that will contribute to the realisation of the Government's vision for an iconic technology precinct and transport gateway. The application seeks consent for the conservation, refurbishment and adaptive re-use of the Adina Hotel building (also referred to as the former Parcel Post building (fPPb)), construction of a 45-storey tower above and adjacent to the existing building and delivery of significant public domain improvements at street level, lower ground level and within Henry Deane Plaza. Specifically, the SSD DA seeks development consent for:

- Site establishment and removal of landscaping within Henry Deane Plaza.
- Demolition of contemporary additions to the fPPb and public domain elements within Henry Deane Plaza.
- Conservation work and alterations to the fPPb for retail premises, commercial premises, and hotel and motel accommodation. The adaptive reuse of the building will seek to accommodate:
 - Commercial lobby and hotel concierge facilities,
 - Retail tenancies including food and drink tenancies and convenience retail with back of house areas,
 - 4 levels of co-working space,
 - Function and conference area with access to level 7 outdoor rooftop space, and
 - Reinstatement of the original fPPb roof pitch form in a contemporary terracotta materiality.
- Provision of retail floor space including a supermarket tenancy, smaller retail tenancies, and back of house areas below Henry Deane Plaza (at basement level 1 (RL12.10) and lower ground (RL 16)).
- Construction of a 45-storey hotel and commercial office tower above and adjacent to the fPPb. The tower will have a maximum building height of RL 202.28m, and comprise:
 - 10 levels of hotel facilities between level 10 – level 19 of the tower including 204 hotel keys and 2 levels of amenities including a pool, gymnasium and day spa to operate ancillary to the hotel premises. A glazed atrium and hotel arrival is accommodated adjacent to the fPPb, accessible from Lee Street.
 - 22 levels of commercial office space between level 23 – level 44 of the tower accommodated within a connected floor plate with a consolidated side core.
 - Rooftop plant, lift overrun, servicing and BMU.

- Provision of vehicular access into the site via a shared basement, with connection points provided to both Block A (at RL 5) and Block B (at RL5.5) basements. Primary access will be accommodated from the adjacent Atlassian site at 8-10 Lee Street, Haymarket, into 4 basement levels in a split-level arrangement. The basement will accommodate:
 - Car parking for 106 vehicles, 4 car share spaces and 5 loading bays.
 - Hotel, commercial and retail and waste storage areas.
 - Plant, utilities and servicing.
- Provision of end of trip facilities and 165 employee bicycle spaces within the fPPb basement, and an additional 71 visitor bicycle spaces within the public realm.
- Delivery of a revitalised public realm across the site that is coordinated with adjacent development, including an improved public plaza linking Railway Square (Lee Street), and Block B (known as 'Central Place Sydney'). The proposal includes the delivery of a significant area of new publicly accessible open space at street level, lower ground level, and at Henry Deane Plaza, including the following proposed elements:
 - Provision of equitable access within Henry Deane Plaza including stairways, ramp access and a publicly accessible lift.
 - Construction of an elevated pavilion within Henry Deane Plaza at RL21.
 - Landscaping works within Henry Deane Plaza and along Lee Street.
- Utilities and service provision.
- Realignment of lot boundaries.

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 17 December 2021 and issued for the SSD DA. Specifically, this report has been prepared to respond to the SEARs requirement issued below.

Item	Description of Requirement	Section Reference
19. Waste Management	<ul style="list-style-type: none"> • If buildings are proposed to be demolished or altered, provide a hazardous materials survey 	Sections 1-7

2.1 Site Description

The site is located within the City of Sydney Local Government Area (LGA). The site is situated 1.5km south of the Sydney CBD and 6.9km north-east of the Sydney International Airport within the suburb of Haymarket.

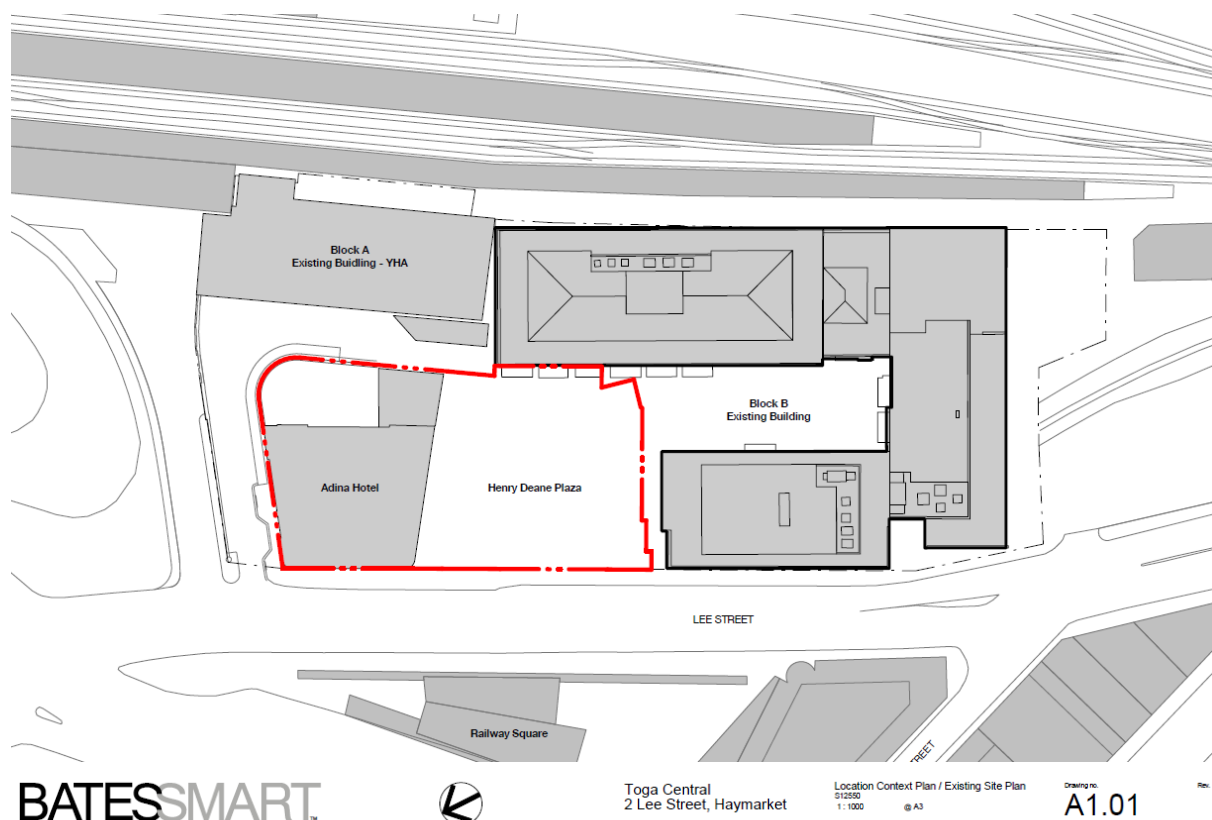
The site is located within the Western Gateway sub-precinct, an area of approximately 1.65ha that is located immediately west of Central Station within Haymarket on the southern fringe of the Sydney CBD. Immediately north of Central Station is Belmore Park, to the west is Haymarket (including the University of Technology, Sydney and Chinatown), to the south and east is rail lines and services and Prince Alfred Park and to the east is Elizabeth Street and Surry Hills.

Central Station is a public landmark, heritage building, and the largest transport interchange in NSW. With regional and suburban train services, connections to light rail, bus networks and to Sydney Airport, the area around Central Station is one of the most-connected destinations in Australia.

The site is located at 2 & 8A Lee Street, Haymarket and is legally described as Lot 30 in Deposited Plan 880518 and Lot 13 in Deposited Plan 1062447. The land that comprises the site under the Proponent's control (either wholly or limited in either height or depth) comprises a total area of approximately 5,450sqm.

The location of the TOGA Central site is illustrated in **Figure 1**.

Figure 1 – Site Identification Plan



Source: Bates Smart

The site currently comprises the following existing development:

- Lot 30 in Deposited Plan 880518 (Adina Hotel building): the north-western lot within the Western Gateway sub-precinct accommodates a heritage-listed building which was originally developed as the Parcels Post Office building. The building has been adaptively re-used and is currently occupied by the Adina Hotel Sydney Central. The eight-storey building provides 98 short-stay visitor apartments and studio rooms with ancillary facilities including a swimming pool and outdoor seating at the rear of the site.
- Lot 13 in Deposited Plan 1062447 (Henry Deane Plaza): the central lot within the Western Gateway sub-precinct adjoins Lot 30 to the south. It accommodates 22 specialty food and beverage, convenience retail and commercial service tenancies. The lot also includes publicly accessible space which is used for pop-up events and a pedestrian thoroughfare from Central Station via the Devonshire Street Tunnel. At the entrance to Devonshire Street Tunnel is a large public sculpture and a glazed structure covers the walkway leading into Railway Square. This area forms part of the busy pedestrian connection from Central Station to Railway Square and on to George and Pitt Streets, and pedestrian subways.

The site is listed as an item of local significance under Schedule 5 of the Sydney Local Environmental Plan 2012 'Former Parcels Post Office including retaining wall, early lamp post and building interior', Item 855.

The site is also included within the Central Railway Station State heritage listing. This is listed on the State Heritage Register 'Sydney Terminal and Central Railway Station Group', Item SHR 01255, and in Schedule 5 of the Sydney Local Environmental Plan 2012 'Central Railway Station group including buildings, station yard, viaducts and building interiors' Item 824.

The site is not however listed independently on the State Heritage Register. There is an array of built forms that constitute Central Station, however the Main Terminal Building (particularly the western frontage) and associated clocktower constitute key components in the visual setting of the Parcel Post building.

2.2 Survey Strategy

The purpose of this survey is to locate, as far as reasonably practicable, the presence, type and extent of any suspect hazardous materials in the building(s), to assess their condition, provide a suitable risk assessment/rating and recommended control actions based on the condition of the materials at the time of the survey. As this is not an intrusive, demolition or refurbishment style survey, findings must not be deemed absolute. A demolition/refurbishment style survey is to be conducted prior to such works commencing as described in AS2601 (2001) The Demolition of Structures and outlined in state WHS Code of Practice: Demolition Work (2015).

3 Methodologies

Hazardous material surveys are undertaken considering a risk management approach, in accordance with best practice, State Legislation and Safe Work Australia NOHSC Guidance. The survey was conducted in a manner which conforms with the *Work Health and Safety Regulations 2017*.

3.1 Asbestos Containing Materials (ACM)

Asbestos containing materials presumed or identified through visual and/or analytical characterisation were performed and reported in this report and documented in the Asbestos Containing Materials Register (ACMR) in accordance with the Code of Practice How to Manage and Control Asbestos in the Workplace (2019).

The assessment was conducted on the basis of the condition, type and location of the materials at the time of inspection. The scope of this investigation did not allow intrusive sampling techniques to be undertaken, and consequently the register may have limitations as a reference document for the purposes of renovation or demolition.

Sample collection was performed in a non-destructive and non-invasive manner by competent persons. Presumptions, based on knowledge and experience, that inaccessible areas may contain asbestos materials may also be made and stated within the register.

Where multiple rooms of similar type occurred in the same building, a representative selection of these rooms was inspected in detail, and a limited walkthrough conducted in the remaining rooms, rather than a detailed inspection of all rooms.

The survey consisted of a visual inspection with limited sampling/analysis of materials undertaken by a trained and experienced surveyor. Materials are assumed to contain asbestos where:

- Laboratory analysis has confirmed the presence of asbestos in a visually similar material; or
- Materials visually appear to be asbestos containing but no sample was collected, for example due to access restraints.

Samples are typically collected using a hand tool or core borer. Hand drills and other tools are used where required. Power tools were not used during the survey.

Small representative samples were collected from materials assumed to contain asbestos (where not previously identified). Samples collected are representative of the material sampled, individually identified, transported, analysed and reported in accordance with Guidelines, relevant Statutory Regulations, Codes of Practice and SLR in-house Work Instructions and procedures. Samples were submitted to a NATA certified laboratory for confirmation analysis by stereo microscope and polarised light microscopy (PLM) with dispersion staining techniques.

Notably, with some asbestos containing bulk material it can be very difficult, or impossible, to detect the presence of asbestos using the polarised light microscopy analytical method, even after ashing or disintegration of samples. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or attributed to the fact that, very fine fibres have been distributed individually throughout the materials. Some materials, such as vinyl tiles, may require further analysis via X-ray diffraction or Scanning Electron Microscopy.

The ACMR consists of relevant information gathered on site, assessment of risk and recommendations for ongoing management of in situ asbestos materials. Reference to photographs, where available, is made in the register along with sample identification and analysis results, where applicable. Sample analysis results from preceding assessments may be referenced in the ACMR (refer to previous survey reports for analytical test results where reference is made to previous sample data).

3.2 Lead

3.2.1 Lead in Paint

Lead paint was identified through analytical characterisation. Small representative samples were collected from paint presumed to contain lead. Samples collected are representative of the material sampled, individually identified, transported, analysed and reported in accordance with the Australian Standard AS 4361.2: *Guide to lead paint management Part 2: Residential, Public and Commercial Buildings* (2017) and SLR in-house Work Instructions and procedures.

Paint samples were submitted to a NATA certified laboratory for confirmation analysis by Inductively Coupled Plasma Emission Spectroscopy (ICP-OES). A paint film that contains greater than 0.1% lead by mass in the dry film is considered lead paint and is sometimes referred to as lead-based paint, lead-containing paint, leaded paint and/or paint containing lead.

Paint samples were collected for laboratory analysis for lead content. Flakes of paint were removed from non-intrusive areas to minimise disturbance. Paint flake samples included all layers of paint on a particular surface and are considered representative of paints in the location sampled. Samples were analysed in a laboratory for lead content by ICP - AES (Inductively Coupled Plasma - Atomic Emission Spectroscopy).

3.2.2 Lead in Settled Dust

Settled dust was sampled and analysed for lead. Sampling and analysis was conducted in accordance with AS 4361.2. Briefly, this involved the collection of settled dust from a known surface area by wet wipe methods. The collected dust is then submitted to a NATA certified laboratory for confirmation analysis by ICP-AES for total lead content. The total lead content and area sampled is then used to calculate a lead in dust loading value in mg/m².

3.3 Polychlorinated Biphenyls (PCBs)

Capacitors in older style fluorescent light fittings are assumed to contain PCBs unless a more detailed inspection and/or laboratory analysis confirms otherwise. A more detailed inspection and/or laboratory analysis would require a qualified electrician to isolate and de-energise the light fittings to enable inspection and sampling.

4 Exclusion

Certain areas of the building(s) were inaccessible at the time of the inspection. This includes areas/materials that were inaccessible due to being “live electrical” or “moving parts” equipment. **Table 1** lists those areas/materials that were inaccessible.

Table 1 Inaccessible Areas and/or Materials

Location	Explanation
Basement - High Voltage Room	Broken lock, no access.
Basement - ‘Private Room’	Locked, no access.

Additionally, and unless specifically noted, the survey did not cover:

- Wall/ceiling panelling behind laminations/coverings.
- Concealed floor coverings beneath carpet or superficial floor coverings.
- Fuses within “live” electrical panelling. Fuses of a certain age may contain asbestos containing flashguards.
- Hidden and/or inaccessible locations such as in or under concrete slabs, in or under vinyl/linoleum/carpet, wall cavities, hidden storage areas and the like. If the vinyl or linoleum is tested, this does not necessarily mean that the resin/glue is included in the analysis.
- Lift wells and inaccessible/unidentified shafts, cavities and the like.
- Air conditioning, heating, mechanical, electrical or other equipment.
- General exterior ground surfaces and subsurface areas eg asbestos in fill/soil.
- Materials dumped, hidden, or otherwise placed in locations which one could not reasonably anticipate.
- Materials other than normal building fabric, materials in laboratories or special purpose facilities and building materials that cannot be reasonably and safely assessed without assistance.

Limited access was available within the Ceiling Cavity Areas, Risers and Plant Room Areas at height due to the concentration of services, limited safe walking paths (where applicable) and lighting.

Materials other than asbestos, lead and PCBs are generally outside the scope of this investigation as identification can require specialised analysis/inspection techniques.

Settled dust is generally not sampled or commented on unless specified. Settled dust may contain hazardous materials, particularly if it is/was once in the vicinity of hazardous materials (such as asbestos containing materials or lead paint). It may also contain hazards originating from outside the building (such as lead from petrol combustion).

5 Survey Results

The results of the asbestos survey are presented in a tabular format. **Section 6.1** details all of the ACM identified. **Section 6.3** shows all of the non-asbestos containing materials as determined during laboratory analysis.

To assist with the interpretation of the results the following legend provides detailed meaning of abbreviations and terms that may appear in the tables.

Legend


Internal/ External	Refers to the location of the material in relation to the structure. Eg Eaves would be External of the building; Kitchen would be internal of the building.
Floor	Refers to the floor level on which the material is located.
Specific location	Refers to the precise location of the material within a room eg Room 1 - infill panel below window on southern wall.
Material	Refers to the type of material identified e.g. vinyl tile, fibre cement sheeting, fibrous insulation, etc. Material does not refer to the use or application of the material. This is covered in 'Application'.
Application	Refers to the use or application of the material e.g. floor covering, soffit lining, pipe lagging, etc.
Photograph	Refers to the photograph reference number located in the appendices.
Approximate Extent	Usually refers to the surface area or length of the material expressed as either square metres (m ²) or linear metres (Lin m). The dimension is an estimate only and should not be relied upon as an exact measure.
Results of Analysis	<p>Refers to the type of asbestos identified during laboratory analysis. There are three main commercial asbestos types: chrysotile (CH-white), amosite (A-brown or grey), and crocidolite (C-blue).</p> <p>The term NAD which appears only in the non-asbestos register; means no asbestos was detected during laboratory analysis.</p> <p>Materials shown as 'Similar to.....' have not been sampled but appear the same as other materials previously sampled.</p> <p>'Suspect' refers to those materials not sampled (perhaps for safety reasons) and which are not similar to previously sampled materials.</p> <p>'Assumed' refers to those materials not sampled (perhaps for safety/access reasons) and which exhibit similar properties to other materials identified/sampled.</p>
Risk of Disturbance	<p>Refers to frequency of disturbance</p> <p>High: The material is located in frequently accessible areas with potential for disturbance</p> <p>Medium: The material is prone to mechanical disturbance due to routine building activity and/or maintenance</p> <p>Low: Routine accessibility is unlikely to cause significant deterioration, the material is located in areas with minimal or no disturbance potential or the material is adequately sealed</p> <p>NA: Not Applicable where Analysis indicates No Asbestos Detected</p>
Overall Condition / Deterioration	<p>Refers to the physical state or condition of the material.</p> <p>Good - material shows no, or very minor, sign of damage and/or deterioration</p> <p>Fair - material shows signs of minor damage and/or deterioration</p> <p>Poor - material shows sign of significant damaged and/or deterioration or the material is partly or wholly unserviceable for its intended use.</p>
Friability of Asbestos	Friable or Non Friable
Sealed / Surface Treatments	Refers to whether or not the material is encapsulated with a sealant such as paint, wall paper, etc. concealing its exposed surfaces.

Outcome of Risk or exposure risk assessment	<p>Below is the general risk matrix that is followed however the consultant will take into account the specifics with each individual situation which may vary the outcome from risk assessment, such variations would be explained in the comments.</p> <p>Refers to the level of risk posed by the material based on its condition, friability, accessibility and other factors such as exposure to disturbance.</p> <p>The Material Assessment score is calculated by adding the parameters above. The potential for releasing fibres is detailed below.</p> <table border="1"> <thead> <tr> <th>Material Assessment Score</th><th>Fibre Release Potential</th></tr> </thead> <tbody> <tr> <td>10 or higher</td><td>High</td></tr> <tr> <td>7 – 9</td><td>Medium</td></tr> <tr> <td>5 – 6</td><td>Low</td></tr> <tr> <td>4 or lower</td><td>Very Low</td></tr> </tbody> </table> <p>The material assessment looks at the type and condition of the ACM and the ease with which it will release fibres if disturbed. It does not take into account occupancy or activities within the area, including periodic maintenance works.</p> <p>Removal Recommended: Engage appropriately qualified persons (i.e. licensed asbestos removal contractor) to remove and dispose of the ACM under controlled conditions in accordance with relevant state specific Removal Code of Practice.</p> <p>Repair / encapsulation Recommended: Repair or encapsulate (e.g. paint) or enclose the ACM to minimise deterioration until such time that the ACM is removed</p> <p>Suitable for Continual Use: ACM may remain in situ provided appropriate management controls are adopted, the material is appropriately labelled and re-assessed every 5 years or earlier, where a risk assessment indicates the need for reassessment or the ACM has been disturbed or removed.</p> <p>NA: Not Applicable where Analysis indicates No Asbestos Detected</p>	Material Assessment Score	Fibre Release Potential	10 or higher	High	7 – 9	Medium	5 – 6	Low	4 or lower	Very Low
Material Assessment Score	Fibre Release Potential										
10 or higher	High										
7 – 9	Medium										
5 – 6	Low										
4 or lower	Very Low										
Recommended control Actions	Refers to the recommended controls / actions required to ensure the identified asbestos materials are managed as per the legislative requirements.										
Labels Affixed	Yes/No or NA - Not Applicable where Analysis indicates No Asbestos Detected										
Additional Comments	Refers to any other relevant comments that may assist with the future management of the material.										
Next Inspection Date	Due 5 yearly from the last Inspection Date or as determined by the Risk Assessment. Full intrusive survey is required prior to demolition or refurbishment										




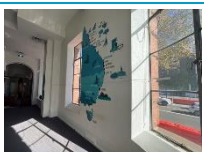
6 Hazardous Materials Registers

The following tables are a register of all identified hazardous materials at the Site, confirmed through analysis or assumed materials deemed to be homogenous or consistent in appearance and manufacture to similar samples collected/analysed. This Summary of hazardous materials should be read in conjunction with all sections of this report.





6.1 Asbestos Containing Materials Register

Sample No./ Visual Observation	Photo	Location	Internal / External Floor Specific Location	Material Application	Extent	Analysis Result	Risk Assessment						Additional information		
							Risk of Disturbance	Overall Condition	Friability	Sealed/ Surface Treatment	Risk Ranking	Control Actions	Labels	Additional Comments	Next Inspection due date
Assumed		2-8A Lee Street, Haymarket	Internal 8th Floor Lift Motor Room	Brake Pads, Friction Material	Unknown	Assumed Asbestos	Low	Fair	Friable	Sealed	Low	Manage and Label	No	No access to live electricals.	01/06/2027

6.2 Lead in Paint / Lead in Settled Dust and Polychlorinated Biphenyls Register




Lead in Paint / Lead in Settled Dust Register									
Sample No./ Assumed	Photo	Material Type and Location	Paint Colour if applicable	Material Status/result	Approx. Extent	Condition	Potential for Disturbance	Relative Risk of Exposure	Comments
FA10		2 8A Lee Street, Haymarket Basement South-western Fire Escape Stairwell - Columns and Ceiling lining	White	Contains 0.75% Lead	20 m ²	Flaking	Medium	Low	Encapsulate and Manage
FA09		2 8A Lee Street, Haymarket Basement Throughout - Vertical Beams	Light Green	Contains 0.42% Lead	15 m ²	Flaking	Medium	Low	Encapsulate and Manage
FA08		2 8A Lee Street, Haymarket Ground Floor Fire Escape - Walls	Cream	Contains 4.3% Lead	10 m ²	Flaking	Medium	Low	Encapsulate and Manage
FA06		2 8A Lee Street, Haymarket Ground Floor Shop 2 - Rendered Walls	White	Contains 3.4% Lead	50 m ²	Flaking	Medium	Low	Encapsulate and Manage




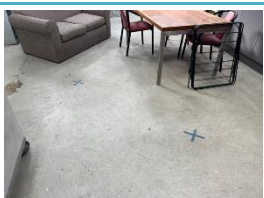
Polychlorinated Biphenyls Register

Sample No./ Assumed	Photo	Location	Material if applicable	Material Status/result	Approx. Extent	Condition	Potential for Disturbance	Relative Risk of Exposure	Comments
Assumed		2 8A Lee Street, Haymarket Basement Throughout	Fluorescent Light Fittings	PCB	>10 units	Good	Low	Low	Manage
Assumed		2 8A Lee Street, Haymarket All Floors, Linen Rooms Throughout	Fluorescent Light Fittings	PCB	>16 units	Good	Low	Low	Manage
Assumed		2 8A Lee Street, Haymarket 7th Floor Throughout	Fluorescent Light Fittings	PCB	>5 units	Good	Low	Low	Manage
Assumed		2 8A Lee Street, Haymarket 8th Floor Throughout	Fluorescent Light Fittings	PCB	>5 units	Good	Low	Low	Manage





The following table is a register of all other materials either visually or analytically confirmed as non-hazardous materials at the Site.





6.3 Non Asbestos Containing Materials Register


Sample No./ Visual Observation	Photo	Location	Interior / Exterior Floor Specific Location	Material Application	Analysis Result	Additional Comments
AS11		2 8A Lee Street, Haymarket	Internal Basement - Carpark	Expansion Joint, Bituminous Product	NAD	No action required
AS12		2 8A Lee Street, Haymarket	Internal Basement Ceiling Spaces - Throughout	Sprayed Coating to Beams, Sprayed Coating	NAD, Organic	No action required
AS13		2 8A Lee Street, Haymarket	Internal Basement - Compressor Room and adjacent Storeroom	Sprayed Coating to Ceiling, Sprayed Coating	NAD	No action required



Sample No./ Visual Observation	Photo	Location	Interior / Exterior Floor Specific Location	Material Application	Analysis Result	Additional Comments
No Hazardous Materials		2 8A Lee Street, Haymarket	Internal Basement - Electrical Switch room	Electrical Backing Boards x 4, Insulating Board	No Asbestos Observed	No action required
AS09		2 8A Lee Street, Haymarket	Internal Basement - Entrance to Private Room and Room adjacent Grease Arrestor Room	Exterior Wall Lining, Fibrous Cement	NAD, Organic	No action required
AS10		2 8A Lee Street, Haymarket	Internal Basement - Room adjacent Grease Arrestor Room	Interior Wall Lining, Fibrous Cement	NAD, Organic	No action required
Similar to AS05		2 8A Lee Street, Haymarket	Internal Basement - Staff Room	Light Grey Vinyl Floor Lining, Vinyl Products	NAD, SMF	No action required

Sample No./ Visual Observation	Photo	Location	Interior / Exterior Floor Specific Location	Material Application	Analysis Result	Additional Comments
No Hazardous Materials		2 8A Lee Street, Haymarket	Internal Ground Floor Electrical Cupboard	Electrical Distribution Board, No Asbestos Suspected	No Asbestos Observed	No action required
AS06		2 8A Lee Street, Haymarket	Internal Ground Floor Shop 3	Vinyl Flooring to Kitchen and Back Areas, Vinyl Products	NAD, SMF	No action required
Similar to AS05		2 8A Lee Street, Haymarket	Internal Ground Floor South-eastern Kitchen/Storage Rooms	Light Grey Vinyl Floor Lining , Vinyl Products	NAD, SMF	No action required
AS07		2 8A Lee Street, Haymarket	Internal 1st Floor Shop 3 - Upstairs Storage Room	Compressed Floor Lining, Fibrous Cement	NAD, Organic	No action required

Sample No./ Visual Observation	Photo	Location	Interior / Exterior Floor Specific Location	Material Application	Analysis Result	Additional Comments
Similar to AS05		2 8A Lee Street, Haymarket	Internal 1st Floor Rooms - Throughout	Light Grey Vinyl Floor Lining to Kitchen, Vinyl Products	NAD, SMF	No action required
Similar to AS05		2 8A Lee Street, Haymarket	Internal 2nd Floor Rooms - Throughout	Light Grey Vinyl Floor Lining to Kitchen, Vinyl Products	NAD, SMF	No action required
Similar to AS05		2 8A Lee Street, Haymarket	Internal 3rd Floor Rooms - Throughout	Light Grey Vinyl Floor Lining to Kitchen, Vinyl Products	NAD, SMF	No action required
Similar to AS05		2 8A Lee Street, Haymarket	Internal 4th Floor Rooms - Throughout	Light Grey Vinyl Floor Lining to Kitchen, Vinyl Products	NAD, SMF	No action required



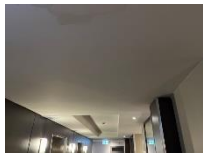

Sample No./ Visual Observation	Photo	Location	Interior / Exterior Floor Specific Location	Material Application	Analysis Result	Additional Comments
AS08		2 8A Lee Street, Haymarket	Internal 4th Floor Rooms - Throughout	Dark Grey Vinyl Floor Lining to Kitchen, Vinyl Products	NAD, SMF	No action required
Similar to AS05		2 8A Lee Street, Haymarket	Internal 5th Floor Rooms - Throughout	Light Grey Vinyl Floor Lining to Kitchen, Vinyl Products	NAD, SMF	No action required
AS05		2 8A Lee Street, Haymarket	Internal 6th Floor Rooms - Throughout	Light Grey Vinyl Floor Lining to Kitchen, Vinyl Products	NAD, SMF	No action required
Similar to AS03		2 8A Lee Street, Haymarket	Internal 7th Floor Ceiling Spaces - Throughout	Sprayed Coating to Beams, Sprayed Coating	NAD, Organic	No action required

Sample No./ Visual Observation	Photo	Location	Interior / Exterior Floor Specific Location	Material Application	Analysis Result	Additional Comments
Similar to AS03		2 8A Lee Street, Haymarket	Internal 7th Floor Fire Escape Stairwells	Sprayed Coating to Beams, Sprayed Coating	NAD, Organic	No action required
AS03		2 8A Lee Street, Haymarket	Internal 7th Floor Lower Plant Room - Throughout	Sprayed Coating to Beams, Sprayed Coating	NAD, Organic	No action required
AS04		2 8A Lee Street, Haymarket	Internal 7th Floor Lower Plant Room - Throughout	Sprayed Coating to Beams, Sprayed Coating	NAD, Organic	No action required
AS01		2 8A Lee Street, Haymarket	Internal 8th Floor Cooling Tower Room	Pipe Gasket, Bituminous Product	NAD	No action required

Sample No./ Visual Observation	Photo	Location	Interior / Exterior Floor Specific Location	Material Application	Analysis Result	Additional Comments
No Hazardous Materials		2 8A Lee Street, Haymarket	Internal 8th Floor Upper Plant Room	Insulation Material to Hot Water Systems (Beneath Silver Lining), No Asbestos Suspected	No Asbestos Observed	No action required
AS02		2 8A Lee Street, Haymarket	Internal 8th Floor Upper Plant Room - Throughout	Mastic to Air Conditioning Ducts, Bituminous Product	NAD	No action required

6.4 Non Lead in Paint / Lead in Settled Dust Register

Sample No./ Assumed	Photo	Material Type and Location	Paint Colour if applicable	Material Status	Approx. Extent	Condition	Comments
LD01		2 8A Lee Street, Haymarket 8th Floor Upper Plant Room - Dust to Ledges	N/A	Contains 2.2mg/m ² Lead	Unknown	Average	No action required
LD02		2 8A Lee Street, Haymarket 5th Floor Ceiling Space - Dust to Ceiling Lining	N/A	Contains 2.9mg/m ² Lead	Unknown	Average	No action required
LD03		2 8A Lee Street, Haymarket 2nd Floor Ceiling Space - Dust to Ceiling Lining	N/A	Contains 1.7mg/m ² Lead	Unknown	Average	No action required
LD04		2 8A Lee Street, Haymarket Basement Ceiling Space - Dust to Ceiling Lining	N/A	Contains 1.9mg/m ² Lead	Unknown	Average	No action required
FA02		2 8A Lee Street, Haymarket External Eastern Aspects - Balcony Upper Facade	Cream	Contains <0.01% Lead	40 m ²	Flaking	No action required
FA05		2 8A Lee Street, Haymarket Ground Floor Shop 2 - Pillars and Balcony	White	Contains <0.01% Lead	80 m ²	Average	No action required

Sample No./ Assumed	Photo	Material Type and Location	Paint Colour if applicable	Material Status	Approx. Extent	Condition	Comments
FA07		2 8A Lee Street, Haymarket 5th Floor Throughout - Walls	White	Contains <0.01% Lead	200 m ²	Flaking	No action required
FA03		2 8A Lee Street, Haymarket 6th Floor Hallways Throughout - Walls	Cream	Contains <0.01% Lead	150 m ²	Average	No action required
FA04		2 8A Lee Street, Haymarket 6th Floor Throughout - Ceiling	White	Contains <0.01% Lead	80 m ²	Average	No action required
FA01		2 8A Lee Street, Haymarket 8th Floor Upper Plant Room - Throughout - Beams	Blue	Contains <0.01% Lead	40 m ²	Average	No action required

Notes:

- AC = Asbestos Cement; FCS = Fibre Cement Sheeting; BEBB Black Electrical Backing Board; NAD = No Asbestos Detected; PCBs = Polychlorinated Biphenyls; LM = Linear Metres; N/A = Not Applicable.
- This Summary of Hazardous Materials should be read in conjunction with all sections of this report.
- All other similar occurrences of the ACM identified in the summary table above should be assumed to contain asbestos, and treated accordingly, unless sampling and analysis confirms otherwise.
- All other similar occurrences of the lead listed in the above summary table should be assumed to contain corresponding levels of lead.
- All other similar occurrences of lead in dust or lead paint listed in the above summary table should be assumed to contain corresponding levels of lead.
- Most of the fluorescent light fittings sighted are of a newer style which are unlikely to house capacitors that contain PCBs. Should any fluorescent light fittings of an older style be present they may house capacitors that contain PCBs, and should be assumed to do so unless a more detailed inspection and/or sample analysis confirms otherwise. A more detailed inspection and/or sample analysis requires a qualified electrician to isolate and de-energise the lights.

7 Discussion and Recommendations

SLR was appointed to complete a survey and assessment of the Site with regards to the identification of hazardous materials as detailed in **Section 2**, Background and Scope. The extent of the inspection and samples collected for subsequent analysis was completed in order to confirm, as far as reasonably practicable, the location, condition and risk presented by hazardous materials remaining in-situ (and was based on the level of access available).

Further to the completion of the on-site investigation and collection/analysis of samples, there are detailed site/work-specific requirements and precautions that must be taken in the management, control and removal of hazardous materials. In addition to those listed on the Hazardous Materials Registers, the following are some general recommendations and precautions that should be considered. Detailed documents, which may include Scope of Works, Safe Work Method Statements and Risk Assessments, should be prepared to appropriately address health and safety issues associated with specific work and site conditions.

Site Specific Recommendations

7.1 Asbestos

- All non-friable ACM in an in-tact condition may remain in-situ provided they are not drilled, ground or otherwise disturbed. If generated, broken pieces are to be removed as soon as practicable. As part of good ongoing management we recommend regular inspections of ACM left in-situ to check the condition of these materials.
- SLR recommends that the presence of asbestos containing brake pads are confirmed upon the next service interval, and are removed by a Licensed Asbestos Removalist is confirmed to be present.
- Any areas of the workplace that contain ACM including plant, equipment and components should be signposted with appropriate warning signs to ensure that asbestos is not unknowingly disturbed without the correct precautions being taken. These signs should be placed at all the main entrances to the work areas where asbestos is present and should conform with Australian Standard 1319-1994 Safety Signs for the Occupational Environment.
- This document should be held as an Asbestos Register of the areas inspected and updated every 5 years or earlier where ACM have been disturbed or a risk assessment indicates the need for re-assessment. All occupiers of the workplace are to be provided with a copy of this register and all updates to it.
- If any material that may contain asbestos is found on site that is not included within the register, the material should be sent for identification and expert advice sought. The material should be assumed to contain asbestos in the interim.
- In order to comply with the Work Health and Safety Regulations 2017, any action taken to control asbestos and ACM in the place of work, or in plant at the place of work, is to be recorded in the Asbestos Control Log.
- Prior to renovation or demolition works a refurbishment/demolition asbestos building materials survey should be undertaken by a suitable qualified and experience consultancy, such as SLR. A Refurbishment and/or Demolition Survey is required under the WHS Code of Practice: Demolition Work (2015) and AS2601 (2001): The Demolition of Structures.

7.2 Lead

7.2.1 Lead in Paint

Four (4) paints containing lead levels greater than 0.1% lead w/w were identified during the survey.

Paint containing more than 0.1% lead w/w content are generally considered to be lead containing; dry sanding of paints with lead can result in the release of unacceptable levels of lead containing dust.

As a precautionary health measure and to prevent contamination to surrounding areas, flaking/deteriorated lead paint should be treated as soon as practicable. Treatment may include the removal of flaking/deteriorated paint (using the appropriate procedures and precautions) before surfaces are repainted.

Dust on surfaces adjacent to flaking paint should be assumed to contain elevated levels of lead. Such dust should be appropriately removed as soon as practicable.

Procedures and precautions detailed in Australian Standard AS 4361.2-2017 *Guide to lead paint management Part 2: Residential, Public and Commercial Buildings*, National Standard for the Control of Inorganic Lead at Work [NOHSC: 1012 (1994)] and the National Code of Practice for the Control and Safe Use of Inorganic Lead at Work [NOHSC: 2015 (1994)] should be followed in the treatment and management of paint containing lead.

Lead paint should be managed to prevent deterioration and becoming a health hazard. Options for the management of lead paint may include the following:

- Do nothing (manage in situ);
- Paint stabilisation;
- Paint abatement; or
- a combination of these options.

7.2.1.1 Manage in situ

If the lead paint is not directly accessible or where it is overpainted with layers of lead-free paint in good condition and not disturbed, the paint can remain in situ provided it is regularly inspected for deterioration. Labelling and/or warning signage should be installed warning of the presence of lead paint.

7.2.1.2 Lead paint stabilisation

Stabilisation of lead paint involves overpaint using lead-free paint or covering it with an encapsulant. Stabilising the lead paint can provide an interim or long-term solution to a lead paint hazard.

Materials used to stabilise existing paint surfaces need to be durable and non-toxic. The integrity of the existing painted surface will determine the effectiveness of stabilisation and thorough surface preparation will be needed to address issues such as chalking, poor adhesion, cracking, flaking, peeling or blistering.

7.2.1.3 Lead paint abatement

Abatement of lead paint involves the suppression, reduction or elimination of the painted surface. This may be achieved by; **replacement** of painted items where they are removed in large pieces/sections and replaced with new materials, **enclosure** of painted items with other materials or **removal** of the paint.

7.2.1.4 Replacement of lead painted items

Replacement of lead painted items is considered the least hazardous way of dealing with lead paint. Other advantages are that labour requirements are reasonable and work can often be completed quickly. Current regulations in most states may allow disposal of these components as regular construction waste.

Removal of building materials or components may generate or disturb lead dust, therefore, safe work practices for lead must be developed and adhered to.

7.2.1.5 Enclosure of lead painted items

Enclosure allows the lead paint to remain in situ and has a low potential for hazardous dust generation, thus minimizing the risk of exposure to building occupants.

Materials used to enclose lead paint surfaces need to be durable, and should be non-toxic and safe to install. Joins should be dust tight.

Labelling and/or warning signage should be installed prior to the installation of the enclosure materials warning of the presence of lead paint. Ongoing regular inspection should be undertaken of the closure materials for damage and/or deterioration.

7.2.1.6 Removal of lead paint

The removal of lead paint has the greatest potential to generate hazardous dust. Therefore, consideration should be given to removal under appropriate containment and ventilation control measures, and safe work practices. Lead waste management and disposal must also be considered.

As a precautionary health measure and to prevent contamination to surrounding areas, flaking/deteriorated lead containing paint should be treated as soon as practicable. Treatment may include the removal of flaking/deteriorated paint (using the appropriate procedures and precautions) before surfaces are repainted.

Dust on surfaces adjacent to flaking paint should be assumed to contain elevated levels of lead. Such dust should be appropriately removed as soon as practicable.

7.2.2 Lead in Settled Dust

Within the scope and limitations of the investigation undertaken, no dust containing greater than (>) 8 mg/m² lead was identified during the survey.

There are currently no recognised Australian regulatory standards with which to compare contaminant concentrations on surface wipes. Therefore although the Australian Standard AS 4361.2-1998 *Guide to lead paint management Part 2: Residential and Commercial Buildings* has been superseded, the referenced surface dust loading limits stated in AS 4361.2 have been adopted as a general guidance on lead in dust acceptance levels after lead paint management activities. The acceptance levels for surface dust are:

- Interior floors 1 mg/m² (as lead)
- Interior window sills 5 mg/m² (as lead)
- Exterior surfaces 8 mg/m² (as lead)

SLR uses the Australian Standard levels above as a guide in assessing lead dust risks. These figures can also be used to assess the risk of exposure from other lead sources.

The acceptance level of lead in dust for exterior surfaces is considered the most appropriate guideline for comparison for lead in ceiling dust.

If any lead contaminated/potentially contaminated dust is encountered on site then access to the material should be appropriately restricted and advice sought from a suitably qualified and experienced consultant, such as SLR.

7.2.3 Contractor Competency

Contractor workers should be competent in relation to the scope of work involved in a lead project. Where a project involves lead paint disturbance, a competent lead abatement contractor, employing a Responsible Person and competent hazardous coating workers should be engaged. In addition, all lead work should be supervised by a suitably experienced and competent consultant, such as SLR, who can provide supervision, advice, sampling, testing and documentation for the project.

Airborne lead monitoring is recommended during all lead paint disturbance work.

7.3 Polychlorinated Biphenyls (PCBs)

Older fluorescent light fittings which are assumed to contain PCBs were identified during the survey.

PCBs are assumed to be present in capacitors in older fluorescent light fittings unless a more detailed inspection and/or sample analysis indicates otherwise. Sampling or a more detailed inspection would require the presence of a qualified electrician to electrically isolate and de-energise the light fittings.

PCBs are a scheduled waste with strict guidelines regarding transport and handling. PCB work is to be conducted in accordance with the *Environmental Protection & Heritage Council's Polychlorinated Biphenyls Management Plan, Revised Edition April 2003*. This includes:

- Prior to demolition when the power is disconnected, inspect the light fittings;

- Metal PCB containing capacitors are to be removed, placed in plastic lined 200 litre drums and disposed of as PCB Scheduled Waste. Any light fittings that show signs of oil staining from capacitors are to be disposed of as PCB contaminated;
- Protective clothing including eye protection, PCB resistant gloves and overalls are to be worn;
- Contaminated gloves and disposable coveralls are to be disposed of as PCB contaminated waste; and
- Contractors licensed to transport and handle PCBs must be used for transport and disposal. PCB is a scheduled waste with strict guidelines regarding transport and handling.

8 Legislation, Guidelines and Regulations

- Work Health and Safety Act 2011
- Work Health and Safety Regulations 2018
- Code of Practice How to Safely Remove Asbestos (2019)
- Code of Practice How to Manage and Control Asbestos in the Workplace (2019)
- Code of Practice Demolition Work (2019)
- Australia and New Zealand Environment and Conservation Council (ANZECC), Polychlorinated Biphenyls Management Plan - 1999
- Australia and New Zealand Environment and Conservation Council (ANZECC), Identification of PCB – Containing Capacitors - 1997
- Australian Standards AS 4361.1: Guide to hazardous paint management Part 1: Lead and other hazardous metallic pigments in industrial applications -2017
- Australian Standard AS4361.2: Guide to lead paint management Part 2: Residential, Public and Commercial Buildings -2017
- Australian Standard AS4874: Guide to the investigation of potentially contaminated soil and deposited dust as a source of lead available to humans - 2000
- Department of Commerce Safe Handling of PCB in Fluorescent Light Capacitors - 1993
- Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [National Occupational Health and Safety Commission: 3003 (2005)]
- AS/NZS 1716-2012 - Respiratory Protective Devices
- AS/NZS 1715-2009 - Selection, Use and Maintenance of Respiratory Protective Devices
- AS 2601-2001 - The Demolition of Structures
- AS 1319-1994 Safety Signs for the Occupational Environment

APPENDIX A

ASBESTOS CONTROL LOG

To comply with the Code of Practice How to Manage and Control Asbestos in the Workplace (2019) all actions taken to control asbestos and ACM are to be recorded in the table below. It is recommended that similar details also be recorded for any other asbestos materials identified.

NAME	COMPANY	DATE	ASBESTOS MATERIAL RELATED WORK UNDERTAKEN (Include any assessment concerning asbestos that took place before the work was carried out)	REFERENCE NUMBER (Include sample numbers, report numbers, quote number and/or purchase order number etc)
Andrew Parker BEnvSc (Hons)	SLR Consulting Australia Pty Ltd	1/06/2022	Hazardous Building Materials Survey	Report No 610.30799.00100-R01-v1\HMR

APPENDIX B

Certificate of Analysis

ASBESTOS ANALYTICAL REPORT

Report Number 610.30799.00100-R01-v1-ANA

Client: TOGA
Client Contact: Kelly Pham
Client Address: Level 5, 45 Jones Street, Ultimo NSW 2007
Sampled By Conor Johnston
Date Sampled: 01 June 2022
Report Date: 08 June 2022
**Site Address/
Location:** 2 & 8A Lee Street, Haymarket NSW 2000
Test Methods: Sample(s) examined under a stereo Microscope and selected fibres under a Polarised Light Microscope with dispersion staining techniques, in accordance with AS4964 and method AIP.01.03.
Laboratory Address Tenancy 202 Submarine School, Sub Base Platypus, 120 High Street, North Sydney NSW 2060 Australia (NATA Accreditation No. 3130)



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Results

Sample No.	Sample Location	Sample Description (including Weight/Size)	Analysis Results
AS01	8th Floor, Cooling Tower Room, Pipe Gasket	Bituminous Product 15 x 10 x 5mm	No Asbestos Detected
AS02	8th Floor, Upper Plant Room - Throughout, Mastic to Air Conditioning Ducts	Bituminous Product 15 x 10 x 3mm	No Asbestos Detected
AS03	7th Floor, Lower Plant Room - Throughout, Sprayed Coating to Beams	Sprayed Coating 10g	No Asbestos Detected Organic Fibres Detected
AS04	7th Floor, Lower Plant Room - Throughout, Sprayed Coating to Beams	Sprayed Coating 11g	No Asbestos Detected Organic Fibres Detected
AS05	6th Floor, Rooms Throughout, Light Grey Vinyl Floor Lining to Kitchen	Vinyl Product 50 x 40 x 5mm	No Asbestos Detected Synthetic Mineral Fibres Detected
AS06	Ground Floor, Shop 3, Vinyl Flooring to Kitchen and Back Areas	Vinyl Product 45 x 30 x 7mm	No Asbestos Detected Synthetic Mineral Fibres Detected
AS07	1st Floor, Shop 3 - Upstairs Storage Room, Compressed Floor Lining	Fibre Cement 25 x 15 x 5mm	No Asbestos Detected Organic Fibres Detected
AS08	4th Floor, Rooms Throughout, Dark Grey Vinyl Floor Lining to Kitchen	Vinyl Product 35 x 30 x 7mm	No Asbestos Detected Synthetic Mineral Fibres Detected
AS09	Basement, Entrance to Private Room and Room adjacent Grease Arrestor Room, Exterior Wall Lining	Fibre Cement 15 x 10 x 5mm	No Asbestos Detected Organic Fibres Detected
AS10	Basement, Room adjacent Grease Arrestor Room, Interior Wall Lining	Fibre Cement 15 x 15 x 5mm	No Asbestos Detected Organic Fibres Detected
AS11	Basement, Carpark, Expansion Joint	Bituminous Product 20 x 10 x 7mm	No Asbestos Detected
AS12	Basement, Ceiling Spaces - Throughout, Sprayed Coating to Beams	Sprayed Coating 9g	No Asbestos Detected Organic Fibres Detected
AS13	Basement, Compressor Room and adjacent Storeroom, Sprayed Coating to Ceiling	Sprayed Coating 5g	No Asbestos Detected

Notes:

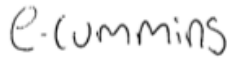
- The results contained within this report relate only to the samples submitted for testing.
- The report(s) and/or information produced by SLR Consulting Australia Pty Ltd should not be reproduced and/or presented/reviewed except in full.

- Even after disintegration of some bulk samples (eg bituminous materials and vinyl tiles/sheeting) detection of fibres may be difficult when using polarized light microscopy and dispersion staining techniques. This may be due to the matrix of the samples (uneven distribution) or fine fibres that are difficult to detect and positively identify.
- Asbestos in non-homogenous samples is reported to the detection limit unless otherwise stated - 0.1 g/kg (AS 4964).
- An Independent Analytical Technique is Recommended for Vinyl Samples (i.e. Vinyl Floor Tiles).
- Laboratory is not accredited to perform sampling

Approved Identifier: Conor Johnston



Approved Signatory: Ewan Cummins



LIMITATIONS

Thus, while we carry out the work to the best of our ability, we totally exclude any loss or damages which may arise from services we have provided to TOGA and/or associated parties.

The analysis was undertaken by SLR Consulting, Tenancy 202 Submarine School, Sub Base Platypus, 120 High Street, North Sydney NSW 2060 Australia (NATA Accreditation No. 3130).

The performance limitation of the *AS 4964 (2004)* method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

All work conducted and reports produced by SLR Consulting Australia Pty Ltd (SLR) are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed upon between SLR and the Client. Information and/or report(s) prepared by SLR may therefore not be suitable for any use other than the intended objective. No parties other than the Client should use any information and/or report(s) without first conferring with SLR.

Before passing on to a third party any information and/or report(s) prepared by SLR, the Client is to inform fully the third party of the objective and scope, and all limitations and conditions, including any other relevant information which applies to the information and/or report(s) prepared by SLR.

It is the responsibility of third parties to investigate fully to their satisfaction if any information and/or report(s) prepared by SLR are suitable for a specific objective.

The report(s) and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.

SLR Consulting
 Tenancy 202, Submarine School, Sub Base Platypus,
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **Jordan Harley**

Report **895061-A**
 Project name **TOGA CENTRAL HMR**
 Project ID **610.30799.00100**
 Received Date **Jun 06, 2022**

Client Sample ID			LD01	LD02	LD03	LD04
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S22-Jn0012159	S22-Jn0012160	S22-Jn0012161	S22-Jn0012162
Date Sampled			Jun 01, 2022	Jun 01, 2022	Jun 01, 2022	Jun 01, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	22	29	17	19

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Jun 06, 2022

Holding Time

28 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Company Name:	SLR Consulting (Sydney)	Order No.:		Received:	Jun 6, 2022 2:30 PM
Address:	Tenancy 202, Submarine School, Sub Base Platypus, North Sydney NSW 2060	Report #:	895061	Due:	Jun 9, 2022
Project Name:	TOGA CENTRAL HMR	Phone:	02 9428 8100	Priority:	3 Day
Project ID:	610.30799.00100	Fax:		Contact Name:	Jordan Harley
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail						Lead	Lead (% w/w)
Melbourne Laboratory - NATA # 1261 Site # 1254							
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
Brisbane Laboratory - NATA # 1261 Site # 20794							
Mayfield Laboratory - NATA # 1261 Site # 25079							
Perth Laboratory - NATA # 2377 Site # 2370							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	FA01	Jun 01, 2022		Paint	S22-Jn0012149		X
2	FA02	Jun 01, 2022		Paint	S22-Jn0012150		X
3	FA03	Jun 01, 2022		Paint	S22-Jn0012151		X
4	FA04	Jun 01, 2022		Paint	S22-Jn0012152		X
5	FA05	Jun 01, 2022		Paint	S22-Jn0012153		X
6	FA06	Jun 01, 2022		Paint	S22-		X

Company Name: SLR Consulting (Sydney)
Address: Tenancy 202, Submarine School, Sub Base Platypus, North Sydney NSW 2060

Project Name: TOGA CENTRAL HMR
Project ID: 610.30799.00100

Order No.:
Report #: 895061
Phone: 02 9428 8100
Fax:

Received: Jun 6, 2022 2:30 PM
Due: Jun 9, 2022
Priority: 3 Day
Contact Name: Jordan Harley

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)
Melbourne Laboratory - NATA # 1261 Site # 1254							
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
Brisbane Laboratory - NATA # 1261 Site # 20794							
Mayfield Laboratory - NATA # 1261 Site # 25079							
Perth Laboratory - NATA # 2377 Site # 2370							
External Laboratory							
					Jn0012154		
7	FA07	Jun 01, 2022		Paint	S22-Jn0012155		X
8	FA08	Jun 01, 2022		Paint	S22-Jn0012156		X
9	FA09	Jun 01, 2022		Paint	S22-Jn0012157		X
10	FA10	Jun 01, 2022		Paint	S22-Jn0012158		X
11	LD01	Jun 01, 2022		Wipes	S22-Jn0012159	X	
12	LD02	Jun 01, 2022		Wipes	S22-Jn0012160	X	

Company Name: SLR Consulting (Sydney)
Address: Tenancy 202, Submarine School, Sub Base Platypus, North Sydney NSW 2060
Project Name: TOGA CENTRAL HMR
Project ID: 610.30799.00100

Order No.:
Report #: 895061
Phone: 02 9428 8100
Fax:

Received: Jun 6, 2022 2:30 PM
Due: Jun 9, 2022
Priority: 3 Day
Contact Name: Jordan Harley

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)
Melbourne Laboratory - NATA # 1261 Site # 1254							
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
Brisbane Laboratory - NATA # 1261 Site # 20794							
Mayfield Laboratory - NATA # 1261 Site # 25079							
Perth Laboratory - NATA # 2377 Site # 2370							
External Laboratory							
13	LD03	Jun 01, 2022		Wipes	S22-Jn0012161	X	
14	LD04	Jun 01, 2022		Wipes	S22-Jn0012162	X	
Test Counts						4	10

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Lead	Total ug	< 1			1	Pass	
LCS - % Recovery							
Heavy Metals							
Lead	%	106			80-120	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Andrew Black
Gabriele Cordero

Analytical Services Manager
Senior Analyst-Metal



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

SLR Consulting
Tenancy 202, Submarine School, Sub Base Platypus,
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: **Jordan Harley**

Report **895061-S**
Project name **TOGA CENTRAL HMR**
Project ID **610.30799.00100**
Received Date **Jun 06, 2022**

Client Sample ID			FA01	FA02	FA03	FA04
Sample Matrix			Paint	Paint	Paint	Paint
Eurofins Sample No.			S22-Jn0012149	S22-Jn0012150	S22-Jn0012151	S22-Jn0012152
Date Sampled			Jun 01, 2022	Jun 01, 2022	Jun 01, 2022	Jun 01, 2022
Test/Reference	LOR	Unit				
Lead (% w/w)	0.01	%	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			FA05	FA06	FA07	FA08
Sample Matrix			Paint	Paint	Paint	Paint
Eurofins Sample No.			S22-Jn0012153	S22-Jn0012154	S22-Jn0012155	S22-Jn0012156
Date Sampled			Jun 01, 2022	Jun 01, 2022	Jun 01, 2022	Jun 01, 2022
Test/Reference	LOR	Unit				
Lead (% w/w)	0.01	%	< 0.01	3.4	< 0.01	4.3

Client Sample ID			FA09	FA10
Sample Matrix			Paint	Paint
Eurofins Sample No.			S22-Jn0012157	S22-Jn0012158
Date Sampled			Jun 01, 2022	Jun 01, 2022
Test/Reference	LOR	Unit		
Lead (% w/w)	0.01	%	0.42	0.75

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Lead (% w/w)

Testing Site

Sydney

Extracted

Jun 09, 2022

Holding Time

6 Months

- Method: LTM-MET-3040 Metals in Waters Soils & Sediments by ICP-MS

Company Name:	SLR Consulting (Sydney)	Order No.:		Received:	Jun 6, 2022 2:30 PM
Address:	Tenancy 202, Submarine School, Sub Base Platypus, North Sydney NSW 2060	Report #:	895061	Due:	Jun 9, 2022
Project Name:	TOGA CENTRAL HMR	Phone:	02 9428 8100	Priority:	3 Day
Project ID:	610.30799.00100	Fax:		Contact Name:	Jordan Harley
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail						Lead	Lead (% w/w)
Melbourne Laboratory - NATA # 1261 Site # 1254							
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
Brisbane Laboratory - NATA # 1261 Site # 20794							
Mayfield Laboratory - NATA # 1261 Site # 25079							
Perth Laboratory - NATA # 2377 Site # 2370							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	FA01	Jun 01, 2022		Paint	S22-Jn0012149		X
2	FA02	Jun 01, 2022		Paint	S22-Jn0012150		X
3	FA03	Jun 01, 2022		Paint	S22-Jn0012151		X
4	FA04	Jun 01, 2022		Paint	S22-Jn0012152		X
5	FA05	Jun 01, 2022		Paint	S22-Jn0012153		X
6	FA06	Jun 01, 2022		Paint	S22-		X

Company Name: SLR Consulting (Sydney)
Address: Tenancy 202, Submarine School, Sub Base Platypus, North Sydney NSW 2060
Project Name: TOGA CENTRAL HMR
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Order No.:
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Perth Laboratory - NATA # 2377 Site # 2370							
External Laboratory							
					Jn0012154		
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8	FA08	Jun 01, 2022		Paint	S22-Jn0012156		X
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12	LD02	Jun 01, 2022		Wipes	S22-Jn0012160	X	

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QSM	US Department of Defense Quality Systems Manual Version 5.4
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WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

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QC Data General Comments

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5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Lead (% w/w)	%	< 0.01			0.01	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

APPENDIX C

Limitations

Surveys are conducted in a conscientious and professional manner. The nature of the task and the likely disproportion between any damage or loss which might arise from the work or reports prepared, and the cost of our services, is such that SLR cannot guarantee that all asbestos building materials have been identified and/or addressed.

Due to the possibility of renovations and additions to the building(s) over time, ACMs may have been concealed (for example behind new walls, flooring, ceilings, within boxing, etc.); such areas were inaccessible during the inspection. It is recommended that prior to any refurbishment/demolition works at the site that a full destructive asbestos building materials refurbishment/demolition survey is undertaken by a suitably qualified and experienced consultancy, such as SLR. An intrusive survey is required under AS 2601 (2001) The Demolition of Structures. If any materials reasonably suspected of containing asbestos are found on site, which are not identified within this report, the client's independent consultant, SLR, should be contacted to complete additional confirmatory sampling and analysis as required.

A change in building use/nature of activities could affect the control actions recommended within this report and a re-survey may be required.

Thus, while we carry out the work to the best of our ability, we totally exclude any loss or damages which may arise from services we have provided to TOGA and/or associated parties.

Where potentially ACMs are identified these are normally reported on to the best of the consultant's ability. Analysis is not normally included and there is no guarantee that all such materials have been identified and/or addressed.

All work conducted and reports produced by SLR are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed upon between SLR and the Client. Information and/or report(s) prepared by SLR may therefore not be suitable for any use other than the intended objective. No parties other than the Client should use any information and/or report(s) without first conferring with SLR.

Before passing on to a third party any information and/or report(s) prepared by SLR, the Client is to inform fully the third party of the objective and scope, and all limitations and conditions, including any other relevant information which applies to the information and/or report(s) prepared by SLR.

It is the responsibility of third parties to investigate fully to their satisfaction if any information and/or report(s) prepared by SLR are suitable for a specific objective.

The report(s) and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.

Materials other than asbestos are generally outside the scope as identification can require specialised analysis/inspection techniques.

Settled dust is generally not sampled or commented on. Settled dust may contain asbestos, particularly if it is in the vicinity of ACM or areas where ACM have been removed.

APPENDIX D

Photographs

Location:	2 8A Lee Street, Haymarket, 8th Floor Lift Motor Room	Material Application	Brake Pads, Friction Material	Extent:	Unknown	Sample Number	Assumed
Main Photo		Close Up Photo		Product Type	Asbestos reinforced composites etc. (1)	Material Score	
				Condition	Fair (0)	4	
				Surface Treatment	Composite (0)	Risk	
				Asbestos Type	Assumed Asbestos (3)	Very Low	
				Recommendation:	Manage and Label		

APPENDIX E

General Information

ASBESTOS

Asbestos: Description, Properties and Uses

Asbestos is the generic term given to a group of naturally occurring fibrous minerals, based on hydrated silicates, which are found in various rock formations. Differing ratios of oxygen, hydrogen, sodium, iron, magnesium and calcium elements account for several different types of asbestos minerals, the most common varieties being Amosite (brown asbestos), Chrysotile (white asbestos), Crocidolite (blue asbestos). Other types include Anthophyllite, Actinolite and Tremolite.

The immense popularity of asbestos as a building material is attributed to its near unique properties of fire resistance, high abrasion resistance and superb acoustical characteristics coupled with its relatively low cost. Prior to 1973, asbestos was the material of choice for fire proofing, thermal insulation, sound insulation and abrasion resistance. It was used as a spray-on insulation of ceilings and steel girders; as a thermal insulation of boilers, pipes, ducts, air conditioning units, etc; as an abrasion resistant filler in floor tiles, vinyl sheet floor coverings, roofing and siding shingles; as a flexible, though resistant joining compound and filler of textured paints and gaskets; as the bulking material with the best wear characteristics for automobile brake shoes and in countless domestic appliances such as toasters, grills, dishwashers, refrigerators, ovens, clothes dryers, electric blankets, hair dryers, etc.

Asbestos: Health Effects

Many asbestos bearing materials or products are of no significant health risk whatsoever when used in the normal course of events. A health risk exists when asbestos fibres are released into the air and when that air is inhaled into the lungs. Even then, it appears that most people exposed to relatively small amounts of asbestos do not develop any related health problems. There is however no “safe” level of asbestos exposure since the risk is dependent on numerous factors including the time since exposure, exposure duration and concentration, asbestos type, the attributes of the particular individual and environmental factors such as exposure to cigarette smoke and other airborne pollutants.

There are three main diseases associated with airborne asbestos fibres:

Asbestosis - A fibrosis (or scarring) of the lung associated with relatively massive exposure to asbestos.

Lung Cancer - Indistinguishable from that caused by smoking and a common cause of death. The risk of lung cancer is much higher when there is exposure to both cigarette smoking and to airborne asbestos.

Mesothelioma - A cancer of the chest and abdominal lining, it is specific to asbestos exposure.

A feature of these diseases is that symptoms take a long time to appear, generally 5 to 40 years. Once symptoms are evident the disease progresses rapidly.

There is some evidence that Chrysotile asbestos is less carcinogenic than Amosite, and that Amosite is less carcinogenic than Crocidolite in causing mesothelioma, but the evidence is less clear for lung cancer.

Measurement of Airborne Asbestos Fibres

The Work Health and Safety Regulations 2017 and the Safe Work Australia Asbestos Codes of Practice & Guidance Note set the maximum allowable time weighted average for all forms of asbestos at 0.1 fibre/mL of air.

Air monitoring is used to determine airborne fibre levels. SLR is NATA certified for Asbestos Fibre Counting and Volume Measurement to carry out such monitoring.

The Safe Work Australia Code of Practice How to Safely Remove Asbestos 2011 states that air monitoring should be performed whenever Asbestos Containing Materials (ACM) are being removed, to ensure the control measures are effective.

The onus to provide a safe environment rests with persons in control of a business or undertaking, persons with management or control and persons carrying out demolition or refurbishment work. To meet these obligations it is recommended that SLR be engaged by the site controller, or their representative, and not an asbestos removal contractor as there could be a conflict of interest in the latter arrangement.

Asbestos Survey

Asbestos surveys are undertaken to identify any asbestos materials/hazards and assess the risk associated with the material/hazard.

Surveys are conducted through visual inspection by experienced personnel. During the inspection material samples are taken as appropriate for analysis.

Limitations

Due to the nature of the task all asbestos surveys are limited. Since asbestos can occur in so many forms and in so many locations, and as there is no instrument to detect asbestos, it is never possible to guarantee all asbestos has been identified. Access is usually restricted, and there may be asbestos hidden behind walls or other structures. Building plans are of great assistance to consultants undertaking surveys.

Asbestos Register

An asbestos register is a record of the location, type and condition of all asbestos containing products identified in a building. Under the Safe Work Australia Codes of Practice and the legislation, any place of work constructed prior to 31 December 2003 must have an Asbestos Register. A SLR Asbestos Survey Report includes an asbestos register.

Registers must be maintained and changes in the condition or extent of any asbestos present should be recorded. Registers should also detail the next review date, at present annually since the condition of asbestos materials, legislation, guidelines and standards change.

Management Plan

An asbestos management plan is required where asbestos materials have been identified and are to remain on site. The plan would normally be a component in the overall Hazard Management Plan for the site.

Control Options

Asbestos judged to constitute a health risk should be removed, enclosed or encapsulated by an approved asbestos contractor.

Enclosure

This involves the installation of a permanent, solid, non-porous, impervious barrier between the asbestos material and the surrounding environment. Examples include building boxes around steam pipes etc. A suspended ceiling is not permanent and, since occasional access is necessary above a suspended ceiling, enclosure is negated. Furthermore, many suspended ceilings act as return air plenums so enclosure is impossible.

Encapsulation

Encapsulation involves coating the material with a sealant. Good sealants penetrate through the asbestos material to the substrate. The encapsulating substance then hardens and binds all the asbestos fibres into a solid matrix. This is usually a short to medium term management option.

Removal

Removal is not without hazards to the occupants of the building. If not strictly controlled, the removal process can result in increased fibre counts in other areas. Technical competence, experience and integrity are of prime importance in evaluating asbestos removal plans.

We advise clients to work within the usual practised time frames of the experienced asbestos removal companies under strict supervision by a qualified person. Pressing for quicker turnaround times may result in low quality workmanship and unnecessary asbestos risk. Building owners may be in part responsible for risks created by the removal Contractor due to carelessness or negligence.

An independent consultant such as SLR, experienced in the supervision of asbestos removal, should be retained to act on the client's behalf.

Clearance Inspection

A clearance inspection must be conducted at the completion of asbestos removal works. The clearance inspection may include airborne asbestos monitoring and/or sampling/analysis of materials and should be completed by a suitably qualified and experienced consultant, such as SLR.

ASBESTOS CEMENT SHEETING

A large number of building products used in the building and construction industry have been made with asbestos and cement. Products include:

- Flat or corrugated, compressed sheeting
- Pipes for water, drainage, flues
- Roof shingles
- Building boards eg Villaboard, Hardiflex, Wundaboard, Flexiboard
- Cable trays for electrical wiring
- Numerous preformed items such as cisterns, protective housings, etc

Provided these products are maintained in good condition, they present no health risk, however precautions must be observed during demolition, refurbishment etc.

Licensing Requirements

Asbestos-containing products are classified as **non-friable** or **friable**. **Asbestos cement** (AC) is classified as **non-friable asbestos** however once it is significantly broken, crushed or otherwise damaged WorkCover NSW may consider it to be friable asbestos. The rules governing friable asbestos are far more stringent.

A WorkCover NSW asbestos licence is required to remove 10 square metres or more of non-friable asbestos and there must be WorkCover NSW notification.

Anyone wishing to carry out friable asbestos removal must obtain a friable asbestos removal licence from WorkCover NSW. A friable asbestos removal permit must be obtained for all friable asbestos jobs.

Removal Procedures

The following procedures are recommended for demolition work involving non-friable asbestos cement sheeting in order to reduce the potential health risk to workers and to building occupants.

All asbestos removal and/or decontamination should be undertaken by a competent person working in accordance with the requirements specified in the Safe Work Australia Asbestos Codes of Practice and the *Work Health and Safety Regulations 2017*. A licensed, experienced asbestos removal contractor is required to remove friable asbestos and >10m² of non-friable asbestos.

5. Prior to commencement of asbestos removal works, suitable warning signs must be erected. All windows and doors etc in the occupied areas of these buildings should be closed so as to prevent the spread of contamination.
6. All asbestos removal operatives to wear half-face particulate filter (cartridge) respirators and approved disposable coveralls.

7. The bolts fixing the asbestos cement sheets to the main frame must be cut out and removed. Abrasive cutting or sanding discs shall not be used on asbestos cement products. Only approved power tools may be used.
8. The asbestos cement sheets should be wetted or PVA coated (polyvinyl acetate). **High water pressures should not be used.**
9. All asbestos cement sheets should be removed with minimal breakage and be **lowered** to ground level, not dropped.
 10. All asbestos cement dust and residues should be cleaned from the work area using an approved vacuum cleaner.
 11. All asbestos containing waste must be removed from the site as soon as possible. The bins should be plastic lined, covered and taped secure prior to removal.
 12. The asbestos waste shall be disposed of in accordance with the existing regulations.
13. Prior to engagement in the work, all asbestos operatives must be trained in safe working practices. These training aspects include:
 - Health hazards of asbestos
 - Safe working procedures
 - Wearing and maintenance of protective clothing and equipment

ASBESTOS CONTAINING VINYL TILES

Vinyl tiles which contain asbestos are considered to be of minimal risk whilst undisturbed and in good condition. The asbestos contained within vinyl tiles is well bound in the parent matrix and fibre release is virtually impossible provided the tiles are not ground, drilled, or otherwise abraded. Normal floor cleaning operations will not release asbestos fibres.

If the tiles are intact and not abraded or drilled etc it is safe to leave them *in-situ*. However, prior to demolition and/or refurbishment all asbestos containing vinyl tiles in the work area must be removed in accordance with the *Work Health and Safety Regulations 2017* and the Safe Work Australia Asbestos Codes of Practice.

Removal Procedures

The following procedures are recommended for the removal of asbestos containing vinyl tiles in order to avoid potential asbestos health risks to workers and building occupants.

If 10 m² or more of vinyl tiles are to be removed the work should be completed by a licensed, experienced asbestos removal contractor with notification to Work Health and Safety Regulations 2017.

1. Prior to commencement of removal works, suitable warning signs must be erected. All windows, doors and vents etc in the occupied areas of the buildings should be closed to reduce the potential for cross-contamination/exposure.
2. All vinyl tile removal operatives are to wear appropriate personal protective equipment (PPE) including respiratory protection, safety glasses/goggles, disposable coveralls, hearing protection and gloves. Steel capped boots, hi-visibility vests and hard hats should also be worn as per the normal requirements for work on construction sites.
3. The tiles can be removed by heating the surface to loosen them or by use of a mechanical chisel to wedge them up. Care should be taken when heating tiles and the glues holding them in place to avoid the generation of toxic fumes. Do not grind, drill or otherwise abrade the tiles in any fashion that generates unnecessary dust/debris.
4. All waste is to be double bagged or placed in lined bins, sealed, and disposed of as asbestos waste in accordance with the Asbestos Codes of Practice and existing guidelines and regulations.
5. The removal area should be detailed clean using an approved vacuum cleaner fitted with a High Energy Particulate (HEPA) filter, and by wet wiping. A detergent should be used when wet wiping as this improves cleaning efficiency.

6. Obtain a clearance inspection and report from an independent, suitably qualified and experienced consultant such as SLR.
7. Upon satisfactory clearance inspection spray the area with a dilute PVA emulsion at low pressure. Multiple applications may be required to provide adequate coverage.
8. Prior to engagement in the work, all asbestos operatives must be trained in safe working practices. These training aspects include:
 - Health hazards of asbestos
 - Safe working procedures
 - Wearing and maintenance of protective clothing and equipment

Air Monitoring

The Safe Work Australia Code of Practice How to Safely Remove Asbestos 2011 states that air monitoring should be performed whenever Asbestos Containing Materials (ACM) are being removed, to ensure the control measures are effective.

All air monitoring must be completed by a NATA accredited organisation as specified in the *Work Health and Safety Regulations 2017*.

Asbestos fibres are generally well bound in the vinyl matrix and fibre release is unlikely provided the tiles are not ground, drilled or similarly disturbed.

Note:

These are general recommendations. In all cases the asbestos removalist should be familiar with, and comply with, the relevant Codes of Practice and the *Work Health and Safety Regulations 2017*. There may also be site specific requirements which should be complied with.

CORRUGATED ASBESTOS CEMENT (AC) ROOFING

Deterioration Mechanisms

Asbestos cement (AC) roofs deteriorate slowly over time. The upper surface exposed to the elements slowly loses cement binder and asbestos fibres become increasingly exposed. This may result in excessive fibre loss and a general weakening of the roof materials which will eventually become porous.

The process of natural weathering may be compounded by exposure to steam, acid fumes and other agents from industrial processes, resulting in accelerated deterioration of the roof.

Hail, heavy rain and other storm activity can cause also significant problems including:

- Cracks and/or penetrations in asbestos cement panels, and resultant generation of asbestos cement dust/debris.
- Shedding of asbestos fibres which may contaminate runoff and enter gutters and drains etc.
- Blocking of gutters with hail and other debris resulting in overflow and asbestos contamination of surrounding areas.

In most situations the underside of AC roofs exhibit very little deterioration however asbestos containing dust can accumulate on the roof support structure and other exposed locations below/around the roof.

If an asbestos cement roof becomes significantly damaged, weathered and or produces visible dust or significant debris it is likely that health and safety management works will be required. A suitably qualified and experienced consultant, such as SLR, can advise and assist in carrying out such works.

Life Expectancy and Maintenance

AC roofs in good condition may remain in place indefinitely providing certain precautions are taken.

- On no account may high pressure water be used to clean AC roofs. This is forbidden under the Safe Work Australia asbestos codes of practice as it can result in widespread contamination.

- AC roofs may not be drilled, ground, cut or otherwise damaged as this may result in the release of airborne asbestos fibres.
- In general, roofs are best left undisturbed if in good condition. There are however several sealing compounds which may be used on AC roofs. The underside of AC roofs may be encapsulated, shielded with sarking or enclosed with a fixed ceiling or other materials. Enclosures are fixed, permanent, non-porous barriers that prevent fibre penetration. All barriers need to be maintained.
- The roof including internal support structure should be inspected regularly (eg at least once a year) by a suitably qualified and experienced consultant such as SLR to assess the condition and extent of the asbestos materials present.
- Gutters and down pipes should be kept clean and in good condition. Some gutters may accumulate a build up of debris which contains asbestos; this is best removed by an experienced licensed asbestos removal contractor.
- Down pipes etc should be protected from damage by forklifts and other vehicles via the installation of appropriate barriers.
- Damaged sections of asbestos containing material should be removed as soon as possible by an experienced licensed asbestos removal contractor. It is illegal to re-use asbestos containing materials.
- As a precautionary measure any exposed broken edges of asbestos material temporarily remaining in place should be sealed with an appropriate sealant such as Emerclad paint.

Demolition

Demolition of AC roofs should only be undertaken by an experienced licensed Asbestos Removal Contractor.

It is recommended that asbestos removal supervision, air-monitoring and clearance inspections be undertaken by an independent, suitably qualified and experienced asbestos consultant such as SLR.

ASBESTOS CONTAINING FIRE DOORS

The cores of older fire doors frequently contain asbestos materials. Such doors may remain in place provided certain precautions are taken. These include:

- Labelling the doors with appropriate warning signs that advise of the asbestos risk.
- Not drilling or otherwise disturbing the doors so as to release airborne asbestos fibres.
- Recording the location, extent and condition of the doors in the site Asbestos Register and addressing them in the site Asbestos Management Plan. A copy of the Asbestos Register and Management Plan should be held by the Building Manager who is to ensure that no work is carried out on the doors without their prior knowledge and the implementation of adequate health and safety precautions.
- Regular inspection and reporting of the condition of the doors.

If the fire doors are damaged then access to the area is to be appropriately restricted and advice sought from a suitably qualified and experienced consultant such as SLR.

Any asbestos removal and/or remediation/decontamination work should be undertaken by a licensed Asbestos Removal Contractor.

LEAD

Lead contamination comes from numerous different sources. Common sources include lead-containing paint, putties, leaded petrol and lead flashing.

Lead is absorbed by ingestion, inhalation and directly through the skin. The finer the particle size the more readily it is absorbed. As a result, some lead compounds are more readily absorbed than others. High lead exposure can cause death, however far lower exposures can also cause a number of adverse consequences, including a reduction in IQ, particularly in children.

Lead containing materials should be managed in accordance with the *Work Health and Safety Regulations 2017* the *National Standard for the Control of Inorganic Lead at Work* [NOHSC:1012(1994)], the *National Code of Practice for the Control and Safe Use of Inorganic Lead at Work* [NOHSC:2015(1994)] and other relevant standards and guidelines as outlined below.

Acceptable Levels

There are numerous standards but application to particular situations is not always clear.

Paint

In 1969 the National Health and Medical Research Council (NH&MRC) introduced the Uniform Paint Standard which banned the use of white lead for domestic buildings and placed a limit on other forms of lead (usually in the form of dryers) in such paints of 1% (by weight on the dry weight). In March 1992 this limit was lowered to 0.25% and has more recently been reduced even further in domestic paints as outlined in Appendix I (the letter not the number) of Standard for the Uniform Scheduling of Drugs and Poisons No 20, 2005 published by Australian Therapeutic Goods Administration under the Therapeutic Goods Act 1989. It is therefore common to find up to 1% lead in paint especially in glossy paints. There is no limit on the lead content of old paint finishes.

Moderate lead levels (less than 4%) are generally not considered an immediate health risk if the paint is in good condition and not likely to be damaged or accessible to children who might chew the paint etc. Removal of such paint however poses a health risk if it is not adequately controlled.

Paints of 1% or more lead content are generally considered to be lead containing; however the dry sanding of paints with even 0.25% lead can result in the release of unacceptable levels of lead containing dust.

Australian Standards AS 4361.1-1995 Guide to lead paint management Part 1: Industrial Applications and AS 4361.2-1998 Guide to lead paint management Part 2: Residential and Commercial Buildings provide guidance for the management of lead paint, information on lead paint testing and selection of an appropriate management strategy.

There is a duty of care to ensure that workers and building occupants are not exposed to excessive lead levels. Young children are particularly at risk.

Dust

Lead in dust is of particular concern because it is easily disturbed and frequently in the form of very fine particles which are more readily absorbed by the human body.

The NH&MRC (National Health & Medical Research Council) has not set guidance concentration levels for lead in dust. Australian Standard AS 4361.2-1998 Guide to lead paint management Part 2: Residential and Commercial Buildings, does not offer any general guidance on lead levels in dust but it does provide acceptable surface-dust lead concentrations after lead paint management activities. The acceptance levels for surface dust are:

- Interior floors 1 mg/m² (as lead)
- Interior window sills 5 mg/m² (as lead)
- Exterior surfaces 8 mg/m² (as lead)

The National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999 Guideline on the Investigation Levels for Soil and Groundwater sets a limit of 300 ppm lead in soils for “standard” residential land-use. This limit is based on both Human Health and Environmental considerations.

Air

The NOHSC (National Occupational Health & Safety Commission) maximum allowable TWA (Time Weighted Average) concentration for airborne lead (inorganic dusts and fumes) is 0.15 mg/m³, however some lead compounds have lower levels. The ACGIH (American Conference of Governmental Industrial Hygienists) have adopted a Threshold Limit Value (Time Weighted Average) of 0.05 mg/m³ for lead and inorganic lead compounds as lead.

Control Measures

When high lead levels are encountered control measures should be put in place which are appropriate to the particular situation, in many cases this may consist of a few simple low cost precautions, in some cases removal by experienced contractors working to detailed procedures with air monitoring and independent supervision is required.

The disposal of lead contaminated material should be in accordance with current legislation and guidance.

SLR can provide expert advice, air monitoring, sampling and project management on lead related issues.

PCBs (POLYCHLORINATED BIPHENYLS)

Description, Properties and Uses

PCBs is an abbreviation for Polychlorinated Biphenyls, a group of synthetic chlorinated organic compounds commonly used as non-flammable oils in electrical equipment.

PCBs were commonly used as insulators in electrical capacitors and transformers but were also used in a wide range of other products that took advantage of their stability. Normally the PCBs are held in a metal container carrying no label signifying PCB content.

Small PCB filled capacitors were fitted to electric motors, welders, and fluorescent lights. Typically they are small metal containers holding about 50 millilitres of PCB. Large oil cooled transformers may contain many litres of PCBs.

Health Hazard of PCBs

PCBs are suspected human carcinogens and are a serious health problem due to their persistence in the environment, their potential for chronic or delayed toxicity and their accumulation in human and animal tissues. They can enter the body in three ways; by absorption through the skin, by inhalation of the vapour of heated PCBs (not a problem at room temperature), and by swallowing contaminated food or drink. Once PCBs are in the body they tend to lodge in the body fat and stay there for a considerable time.

Exposure to PCBs can cause a range of health problems whose effects increase with the duration of exposure and concentration levels.

PCBs are proven animal carcinogens and suspected human carcinogens. The results of exposure may include liver damage, respiratory disorders, chloracne (a severe skin rash), eczema and skin discolouration. PCBs have also been associated with thyroid gland disorders, muscle and joint pain, headaches, nausea, loss of appetite, abdominal pain, and are potentially related to reproductive problems in humans. Pregnant women should avoid PCB polluted areas.

PCB liquid and vapour is moderately irritating to the eyes.

Collection, Transport and Disposal

PCBs must be handled with care. They are very penetrating and will pass through some types of plastic gloves. When collecting PCBs appropriate personal protective equipment (PPE) must be worn.

PCBs are assumed to be present in fluorescent light fittings unless inspection indicates otherwise. Removal requires the following:

- Prior to demolition when the power is disconnected inspect the light fittings.
- Metal PCB containing capacitors are to be removed, placed in plastic lined 200 Litre drums, sealed and disposed of as PCB Scheduled Waste. Any light fittings that show signs of oil staining from capacitors are to be disposed of as PCB contaminated waste.
- Protective clothing including PCB resistant gloves to be worn.
- Contaminated gloves and disposable coveralls to be disposed of as PCB contaminated waste.
- PCBs are covered by a Chemical Control Order under the Environmentally Hazardous Chemicals Act 1985. The labelling, storage, transport and disposal of PCBs is highly regulated, and professional advice should be sought on how to deal with these materials.
- Contractors licensed to transport and handle PCBs must be used for transport and disposal.

Register and Management Plan

The Environment Protection & Heritage Council's *Polychlorinated Biphenyls Management Plan, Revised Edition April 2003* requires that a risk-based strategy for equipment containing PCBs be adopted. The elements of this strategy are surveying, testing and removal of identified high risk equipment. **There is a timetable by which surveys are to be completed.**

Property owners and managers should have a PCB register. This could form part of their Hazardous Materials Register for the site. Where PCBs are identified a PCB Hazard Management Plan should be in place. This could be a part of the Hazardous Materials Management Plan for the site.

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