



**FOUNDATION  
EARTH  
SCIENCES**

# **Preliminary Hazardous Materials Assessment**

## **Property Address**

2-12 Middleton Avenue, Castle Hill NSW

## **Prepared for**

Arada Pty Ltd

## **Date**



June 2024

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Prepared		Daniel Gibbs LAA002094, CPCCBC5014A	14/06/2024
Authorised		Benjamin Buckley- Director B.Env Sc., BSc (Forensics)	14/06/2024



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## 1.0 INTRODUCTION AND SCOPE

Foundation Earth Sciences (FES) was appointed by to conduct a Hazardous Materials Assessment of the properties located at 2-12 Middleton Avenue, Castle Hill NSW (“the site”).

Refer to **Figure 1** - Site Location.

The site was visited on the 13<sup>th</sup> June, 2024 by FES staff. All fieldwork and reporting were conducted in accordance the Workplace Health and Safety Act 2011, and SafeWork regulations.

The objectives of this assessment are to identify and, if possible, quantify any potential hazardous materials found at the site and determine if these materials present a potential health risk to people currently using the site or involved in the demolition of the site.

Our scope of works to undertake the project included:

- Conducting a site inspection to identify all areas of potential concern (such as roofing, insulation, switchboards, ventilation shafts, building materials, fire doors etc);
- Site photographs;
- Site sampling (if necessary);
- Laboratory analysis;
- Interpretation of results and findings; and
- Recommendations and final conclusions drawn from the assessment results.



## 2.0 SITE INFORMATION

### 2.1 Site Identification

Site Identifier	Site Details	
Site Location	2-12 Middleton Avenue, Castle Hill NSW	
Lot/DP	Lot 20 in DP247890	
Site Area (Approx.)	5700m <sup>2</sup>	
Local Government Area (LGA)	The Hills Shire	
Surrounding Land Uses	<i>North</i>	Residential
	<i>South</i>	Residential
	<i>East</i>	Residential
	<i>West</i>	Residential

### 2.2 Site Description

The site is situated in a Residential area of The Hills Shire municipality. The main features of the properties include the following:

1. Six multi storey buildings of brick construct;
2. Awnings/ extension off the main structures;
3. Concrete driveways;
4. Multiple landscape areas;
5. A swimming pool area.



## **3.0 ASBESTOS**

### **3.1 Background**

Asbestos is the fibrous form of various mineral silicates, which belong to the Serpentine and Amphibole groups. The more significant species of asbestos in terms of health risks include chrysotile (white), crocidolite (blue), amosite (brown or grey). As a product, asbestos has a remarkable ability to resist heat and considerable resistance to acids, alkalines and other chemicals. It is also a very good non-conductor of electricity. Asbestos is found in a wide variety of materials which include insulation, roofing materials, floor tiling, cement products, resins and in many other building materials and structures.

Exposure to the asbestos dust will occur primarily during a disturbance of the material when dust is formed and dispersed as airborne contamination. Drilling, sawing, sanding, grinding and cracking of the materials will generally provide enough disturbances to create harmful dust.

### **3.2 Health Aspects and Exposure Standards**

Inhalation of high concentrations of asbestos may result in asbestosis, a progressive scarring of lung tissue and lung cancer, or mesothelioma, a form of lung cancer. The destructive nature on lung tissues of asbestos fibres below 3 microns (3µm) in diameter has been well documented, especially that of blue and brown forms of asbestos. Common latency periods for associated diseases to develop are within 10 to 50 years, which emphasizes the need to minimize potential exposure pathways and maximize control measures and monitoring procedures.



Any admissible exposure to airborne asbestos should be kept as low as achievable and in any case below the specified exposure standards. These standards are determined by the *National Commission for Occupational Exposures*. Below is a summary of the threshold limits for airborne concentrations measured as a time-weighted average (TWA) fibre concentration.

**Table 1: Exposure Standards – TWA Fibre Concentration Limits**

Asbestos Species	Concentration (fibres/mL)
Chrysotile	0.1
Crocidolite	0.1
Amosite	0.1
Other forms	0.1
Other mixtures of species	0.1

## 4.0 LEAD PAINT

### 4.1 Background

White lead (lead carbonate) was once the principal white pigment in paints for houses and public buildings. Many older Australian homes and buildings still contain lead paint, even though it may be covered with layers of more recent paint. It was used mainly on exterior surfaces and to a lesser extent on interior doors and architraves, especially in undercoats and primers where concentrations of up to 20% lead were commonly used.



## 4.2 Health Aspects and Exposure Standards

Lead in any form is toxic to humans when ingested and inhaled. Repeated inhalation or ingestion of lead paint particles may produce the cumulative effects of lead poisoning (plumbism).

The term “lead paint” in this survey refers to all paint that contains in excess of 1% lead by weight as defined by “Guide to Lead Paint Management – Part 2: Residential and Commercial Buildings [AS 4361.2 – 1998]”.

## 4.3 Management of Lead Paint

Confirmed lead containing paintwork should be managed according to the laboratory results attached to this report, the assessment of the paint condition found in the hazardous materials register, and in accordance with “Guide to Lead Paint Management – Part 2: Residential and Commercial Buildings [AS 4361.2 – 1998]”.

The following skill levels are required based on the adopted management option:

- Painting contractor (Encapsulation, Overpaint & Simple Enclosure).
- Lead certified painting contractor (Paint removal, Encapsulation, Overpaint & Simple Enclosure).
- Certified lead abatement contractor (Replace components, Paint removal, Encapsulation, Overpaint & Simple Enclosure).
- Lead trained builder (Major enclosure & Replace components).



Waste produced by the removal of lead paint should be managed in accordance with “Guide to Lead Paint Management – Part 2: Residential and Commercial Buildings [AS 4361.2 – 1998]”.

## **5.0 SAMPLING METHODOLOGY**

This assessment involved a visual inspection of accessible and representative construction materials with confirmative sampling using a polarised microscope. Destructive sampling techniques were undertaken where practicable. The site was inspected for the presence of the following hazardous materials.

### **5.1 Asbestos**

This component of the assessment was carried out in accordance with the guidelines documented in the *Code of Practice for the Management and Control of Asbestos in Workplaces* [NOHSC: 2018 (2005)]. A visual inspection targeted the areas of most concern such as floor tiles, guttering, associated piping, lagging around pipe work, cooling and insulation material, building materials, roofing, and sound proofing. Samples were taken from accessible locations suspected as containing asbestos, where destructive sampling was practical.

### **5.2 Synthetic Mineral Fibres (SMF)**

This component broadly identifies SMF materials found or suspected of being present during the survey based on a visual assessment. A visual inspection targeted the areas



of most concern such as piping, lagging around pipe work, cooling / insulation material, building materials, roofing, and sound proofing.

### **5.3 Polychlorinated Biphenyls (PCBs)**

Where safe access could be gained, detailed information of capacitors in light fittings was noted for cross-referencing with the ANZECC Identification of PCB Containing Capacitors database – 1977. Due to the inherent hazard in accessing electrical components, or other reasons such as height restrictions, immovable equipment and furniture, light fittings may not be safely accessed. In these instances, comment is made on the likelihood of PCB-containing materials based upon age and appearance.

### **5.4 Lead Containing Paint**

This component of the assessment was carried out in accordance with the guidelines documented in the “Guide to Lead Paint Management – Part 2: Residential and Commercial Buildings [AS 4361.2 – 1998]”. A visual inspection targeted the areas of most concern such as peeling paint, door frames, and windowsills. Samples were taken from accessible locations suspected to contain lead paint, where destructive sampling was practical.

### **5.5 Lead Containing Dust**

A visual inspection of areas of suspected lead-containing dust was conducted in accordance with AS4874-2000 “*Guide to the Investigation of Potentially Contaminated Soil and Deposited Dust as a Source of Lead Available to Humans*”.



## 5.6 Electrical Backboards

A visual assessment was conducted on the electrical backboards to check for hazardous materials. No sampling was undertaken on service access points as services were live during the inspection.

## 5.7 Inaccessible Areas

During the inspection some areas were inaccessible and therefore excluded from this report and hence the inspection was limited to those spaces available at the time of the inspection. Some occupied areas were visually assessed due to limited access and sampling was not undertaken, however adequate assessment and categorisation of the site including the nature and extent of hazardous materials present has been undertaken. These areas include:

- Beneath floating floorboards and above floating ceilings;
- Within locked rooms;
- On roofs;
- On or within awnings;
- Within overgrown areas.

During the inspection, building 8 Middleton Avenue and 12 Middleton Avenue were inaccessible due to occupancy. These buildings are there for exclude from this preliminary report.



## 5.8 Sampling Identification

Samples were labelled in accordance with their type and locations and were submitted to a NATA accredited laboratory under chain of custody.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Asbestos Materials

Through field examination and sampling, ***Asbestos materials were identified at the site.*** Licensed removal is required for asbestos containing material. Caution should be taken during the demolition process.

If asbestos was identified refer to hazardous materials register and photos for asbestos containing materials and their locations.

### 6.2 Synthetic Mineral Fibres (SMF)

Confirmed SMF materials should be removed under controlled conditions prior to renovation or demolition works. Refer to hazardous materials register and site plan.

### 6.3 Polychlorinated Biphenyls (PCBs)

Confirmed fluorescent lights containing cadmium/PCB capacitors should be removed under controlled conditions by a licensed contractor prior to renovation or demolition works. Through field examination cadmium/PCB capacitors are expected to be present



within the fluorescent lighting. A more detailed inspection and/or sample analysis requires a qualified electrician to isolate and de-energise the lights.

#### **6.4 Chlorofluorocarbon (CFCs)**

Refrigerants and air conditioning units should be removed under controlled conditions by a licensed contractor prior to renovation or demolition works. Through field examination vapour compression cycles containing CFCs are expected to be present within the refrigerates and air conditioning units. A more detailed inspection and/or laboratory analysis would require a qualified refrigeration specialist who holds a Refrigerant Handling Licence to assess the vapour compression cycle.

#### **6.5 Paint Containing Lead**

Through field examination, some areas of suspected paint containing lead were identified and sent for laboratory analysis. paint containing lead may be present in other areas. Confirmed paint containing lead should be managed in accordance with “Guide to Hazardous Paint Management – Part 1: Lead and other hazardous metallic pigments in industrial applications [AS 4361.1 – 2017]”

If paint containing lead was identified refer to hazardous materials register and photos for sample locations.

#### **6.6 Dust Containing Lead**

Confirmed dust containing lead should be removed under controlled conditions prior to renovation or demolition works in accordance with “Guide to Hazardous Paint Management – Part 1: Lead and other hazardous metallic pigments in industrial applications [AS 4361.1 – 2017]”



## **General**

In conclusion, our findings have satisfied the DA requirements for a hazardous materials survey to be conducted at the properties and have determined that the site, as it currently stands is impacted by the following hazardous materials:

- Asbestos Containing Material (ACM)
- Synthetic Mineral Fibres (SMF)
- Chlorofluorocarbon (CFCs)
- Polychlorinated Biphenyls (PCBs)

Reference should be made to the Hazardous Materials Register for a detailed description of the hazardous materials described above.

Only when the identified buildings are to be renovated or demolished do all hazardous materials need to be appropriately removed. We would be pleased to provide further information on any aspects of this report.

For and on behalf of

**Foundation Earth Sciences**



**Ben Buckley**

Principal Environmental Forensic Scientist

Asbestos Assessor Licence #-LAA001012



## **LIMITATIONS**

Whilst to the best of our knowledge, information contained in this report is accurate at the date of issue, although subsurface conditions, including groundwater levels and contaminant concentrations, can change in a limited time. This should be borne in mind if the report is used after a protracted delay.

There is always some disparity in subsurface conditions across a site that cannot be fully defined by investigation. Hence it is unlikely that measurements and values obtained from sampling and testing during environmental works carried out at a site will characterise the extremes of conditions that exist within the site.

There is no investigation that is thorough enough to preclude the presence of material that presently or in the future, may be considered hazardous at the site. Since regulatory criteria are constantly changing, concentrations of contaminants presently considered low may, in the future, fall under different regulatory standards that require remediation.

Opinions are judgements, which are based on our understanding and interpretation of current regulatory standards and should not be construed as legal opinions. Previous testing locations are excluded from this report and should be managed in accordance with the previous soil classifications undertaken.

Areas that were inaccessible (floating ceilings and wall cavities, below floorboards, occupied tenancies, awnings etc) have not been assessed and demolition should proceed with care in inaccessible areas. Further assessment should be undertaken immediately if indicators of contamination are identified.



## **REFERENCES**

- NSW Environment Protection Authority (July 1998), “Lead Safe, A renovators guide to the dangers of lead”.
- NSW Environment Protection Authority (February 1998), “Lead Safe, A guide to keeping your family safe from lead”.
- NSW Environment Protection Authority and Planning NSW (May 2003) “Managing lead contamination in home maintenance, renovation and demolition practices, A Guide for Councils”
- “Guide to Hazardous Paint Management – Part 1: Lead and other hazardous metallic pigments in industrial applications [AS 4361.1 – 2017]”
- NSW Environment Protection Authority and NSW Health (1992) “NSW government, Lead issues paper, NSW Environment Protection Authority”.
- Enhealth (2005) *Management of asbestos in the non-occupational environment*
- City Of Sydney *Asbestos policy*
- NOHSC (2005) *Code of practice for the safe removal of asbestos*
- NOHSC (2005) *Code of Practice for the Management and Control of Asbestos in Workplaces*
- WorkCover NSW (2008) *Your guide to working with asbestos* (available from [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au))
- NSW Occupational Health and Safety Regulation 2011



## HAZARDOUS MATERIALS REGISTER

2-12 Middleton Avenue, Castle Hill NSW

Sample	Location	Surface	Material/ Condition	Result	Priority	Friable/ Non-Friable	Accessibility	Comment	Approx. Qty
N/A	All Structure.	Switchboard backing	Bituminous board. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible while power is connected.	<b>Licensed removal prior to demolition.</b>	4
N/A	All Structure.	Hot water & AC systems	Internal Insulation. N/A	<b>Material assessed and SMF expected present within system.</b>	Low	Non-friable	Not accessible without equipment.	<b>Appropriate removal prior to demolition.</b>	7
AS1	2 Middleton Avenue, exterior.	Eaves of extension	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
N/A	2 Middleton Avenue, exterior.	Eaves of main structure	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
AS3	2 Middleton Avenue, upstairs bathroom.	Internal walls	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
N/A	2 Middleton Avenue, exterior.	Front veranda ceiling and panels	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	N/A	Not accessible without equipment.	<b>Appropriate removal prior to demolition.</b>	N/A
N/A	4 Middleton Avenue, exterior.	Eaves of main building	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A



AS4	4 Middleton Avenue, ground floor exterior.	Front veranda ceiling	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
AS5	4 Middleton Avenue, ground floor exterior.	Facia cladding	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
AS6	4 Middleton Avenue, ground floor bathroom.	Internal walls	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
AS7	4 Middleton Avenue, ground floor garage.	Internal wall	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
AS8	4 Middleton Avenue, second floor interior.	Orange internal wall.	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
N/A	6 Middleton Avenue, ground floor exterior.	Eaves of main building	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
N/A	6 Middleton Avenue, ground floor garage.	Ceiling	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
AS9	6 Middleton Avenue, ground floor garage.	Internal wall	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
AS10	6 Middleton Avenue, internal bathroom.	Internal walls	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A



AS11	6 Middleton Avenue, ground floor exterior.	Front veranda ceiling	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
AS12	10 Middleton Avenue, ground floor exterior.	Facia cladding	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
N/A	10 Middleton Avenue, exterior.	Eaves of main building	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
AS13	10 Middleton Avenue, ground floor laundry.	Internal walls	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A
AS14	10 Middleton Avenue, ground floor Livingroom/ kitchen.	Internal walls	Fibrous cement sheeting. Good condition.	<b>Material assessed and asbestos presence expected.</b>	Med	Non-friable	Not accessible without equipment.	<b>Licensed removal prior to demolition.</b>	N/A

Notes:

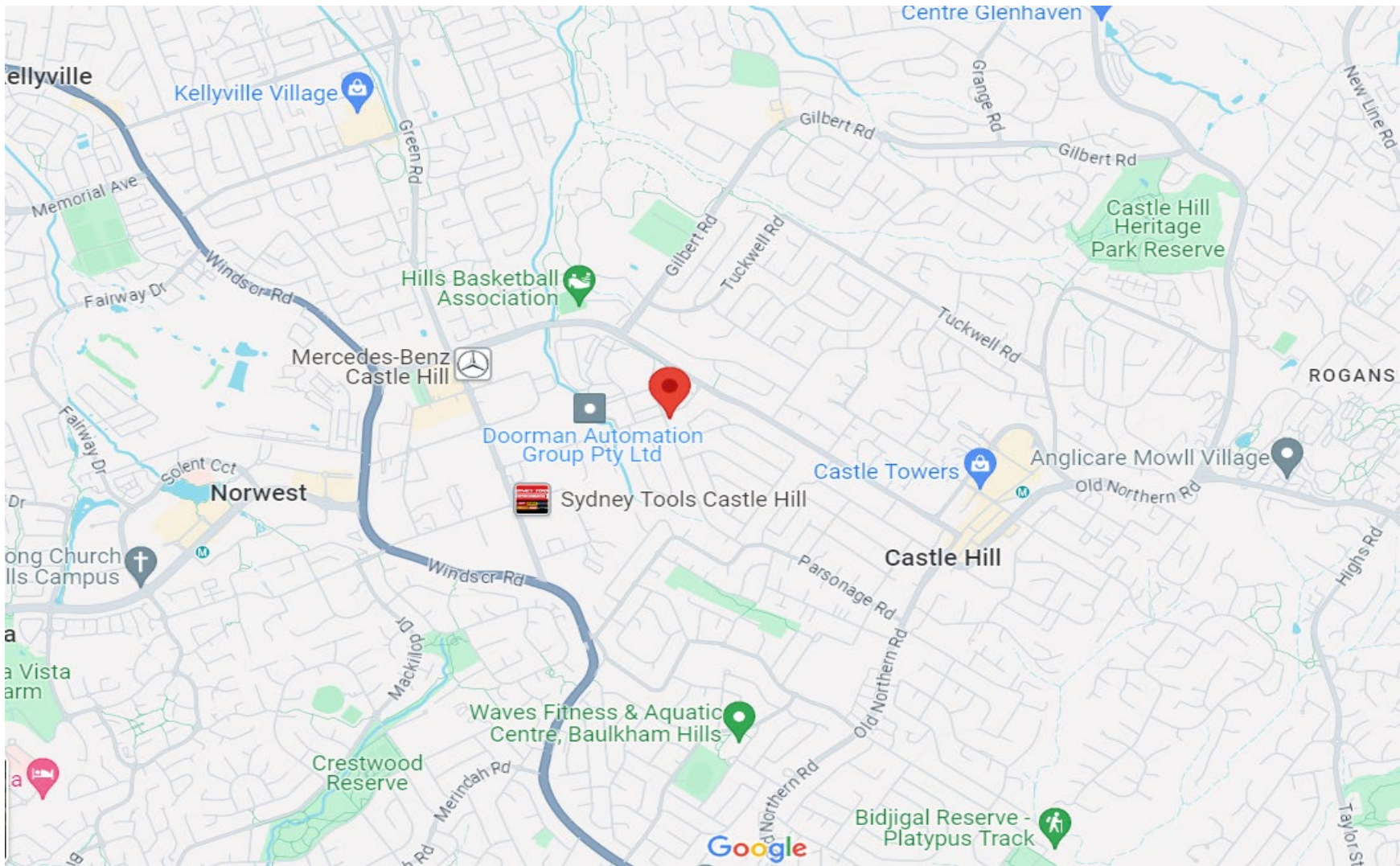
- Only when the identified buildings are to be renovated or demolished do all materials containing asbestos need to be appropriately removed.
- All Asbestos removal works shall be undertaken by licensed and WorkCover approved Asbestos Removalists
- Removal of Asbestos containing material shall be conducted in compliance with the requirements of the Workplace Health and Safety Regulations, 1997.
- Asbestos detected.
- Synthetic mineral fibres detected.
- Lead in paint >1%

*Note: although the information provided by an environmental assessment could reduce exposure to risks, no assessment, however diligently conducted, can eliminate them. It must be noted that these findings are professional findings and have limitations. Even a rigorous professional assessment may fail to detect all hazardous material on a site. Hazardous materials may be present in areas that were not surveyed or sampled.*



**FIGURE 1: SITE LOCATION**





**Key**

Site Location



**DRAWN**

DG

**Figure**

1

**Job #**

E3212

**SITE LOCATION**

Hazardous Materials Assessment

2-12 Middleton Avenue, Castle Hill NSW

**FIGURE 2: SITE PLAN**



Feature No	Details
a	2 Middleton Avenue
b	4 Middleton Avenue
c	6 Middleton Avenue
d	8 Middleton Avenue
e	10 Middleton Avenue
f	12 Middleton Avenue



Key
Site Location



DRAWN DG
Figure 2
Job # E3212

Site Plan	
Hazardous Materials Assessment	
2-12 Middleton Avenue, Castle Hill NSW	

### FIGURE 3: SITE PHOTOS

Switchboard backing board example.



Hot water systems example.



AC systems example.



Fluorescent lighting example.



AS1: 2 Middleton Avenue, eaves of extension



2 Middleton Avenue, eaves of main building



AS3: 2 Middleton Avenue, second floor bathroom walls



2 Middleton Avenue, veranda ceiling and panels



4 Middleton Avenue, exterior eaves



AS4: 4 Middleton Avenue, veranda ceiling



AS5: 4 Middleton Avenue, fascia cladding



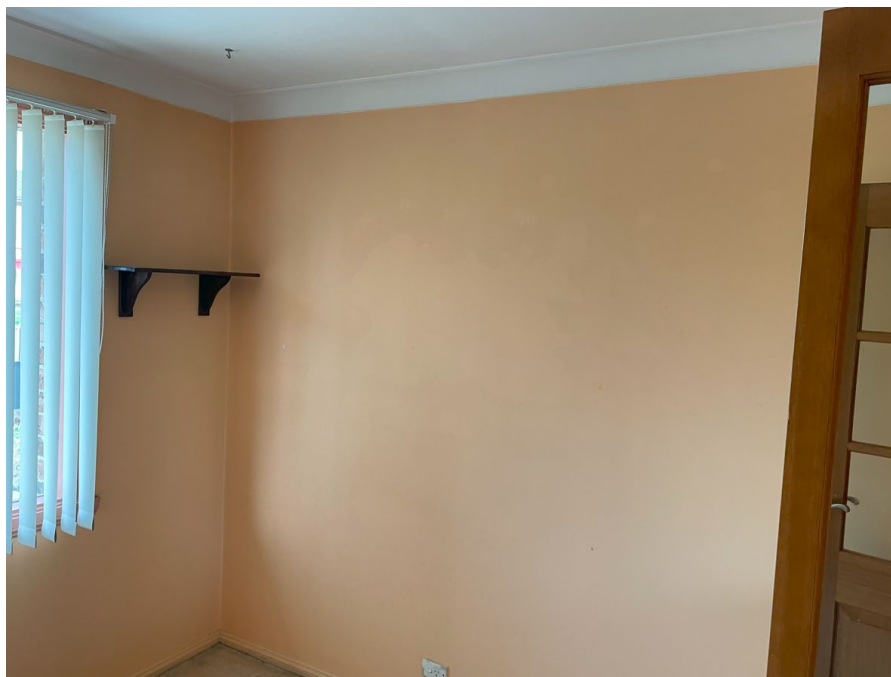
AS6: 4 Middleton Avenue, ground floor bathroom walls



AS7: 4 Middleton Avenue, ground floor bathroom walls



AS8: 4 Middleton Avenue, second floor internal wall



6 Middleton Avenue, exterior eves



6 Middleton Avenue, garage ceiling



AS9: 6 Middleton Avenue, garage internal walls



AS10: 6 Middleton Avenue, internal bathroom walls



AS11: 6 Middleton Avenue, front veranda ceiling



AS12: 10 Middleton Avenue, external cladding



10 Middleton Avenue, external eves



AS13: 10 Middleton Avenue, laundry walls

