Hazardous Building Materials Report – 101 Nuwarra Road, Moorebank NSW

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Contents

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1 Introduction

Dirt Doctors Pty Ltd has been engaged by OAR2 Pty Ltd (the client) to undertake a Hazardous Building Materials Survey of the site, 101 Nuwarra Rd, Moorebank NSW (the site) and in turn provide a Hazardous Building Materials Register of site as a result of onsite observations.

1.1 Objective

The objective of the Survey is to identify hazardous building materials located throughout the site and provide a Hazardous Building Materials Report outlining findings and recommendations for managing hazardous building materials identified on site, as per legislative requirements prior to, and in preparation for remediation; prior to proposed demolition works.

1.2 Scope of Works

Locate, inspect and sample, as required and as far as reasonably practicable, asbestos containing materials (ACM), synthetic mineral fibre (SMF), Polychlorinated Biphenyls (PCB's) containing capacitors in in fluorescent light fittings, lead containing paint and lead containing dust. Where collected, samples will be analysed at an external NATA accredited laboratory.

Document the nature, location and condition of hazardous building materials identified on the site, including a risk assessment and photographic evidence within a report, as well as a register providing recommendations for the remediation of the hazardous building materials.

2 Legislative Requirements

The Survey was conducted in accordance with the following;

- Work Health and Safety Act 2011
- Work Health and Safety Regulation 2017
- Code of Practice for How to Manage and Control Asbestos in the Workplace September 2016 (SafeWork NSW)
- Code of Practice for How to Safely Remove Asbestos September 2016 (SafeWork NSW)
- Guidance note on the Membrane Filter Method for the estimation of airborne asbestos fibres 2nd edition [NOHSC: 3003 (2005)]
- Code of Practice Demolition Work September 2016 (SafeWork NSW)
- AS 2601 (2001) Demolition of Structures
- Australian Standard AS4361.2 Guide to Lead Paint Management; Part 2 Residential and Commercial Buildings
- Guide to handling Refractory Ceramic Fibres
- Code of Practice for the safe use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)]
- Guidance notes on the Membrane Filter Method for the estimation of airborne synthetic mineral fibres [NOHSC: 3006 (1989)]
- Australian and New Zealand Environment and Conservation Council (ANZECC) 1997 publication: Identification of PCB-containing capacitors

3 Methodology

The survey of the subject site will be conducted based on Dirt Doctors Pty Ltd policies and procedures, as well as considering the experience of the Competent Person and/or Licensed Asbestos Assessor.

3.1 Visual Inspection Sample Collection

The Survey involved a visual inspection of accessible and representative building materials and the collection and analysis of materials suspected of containing hazardous materials (if any). Destructive sampling techniques were undertaken to collect the samples, where practicable and safe to do so. Where required and possible, samples were collected from discrete locations and the sample location stabilised to prevent further disturbance.

3.2 Asbestos Containing Materials

Asbestos is the fibrous form of mineral silicates, with the most significant types including chrysotile, crocidolite and amosite. Asbestos was widely used in, but not limited to, construction of early dwellings (pre-1980), electrical boards, cement and vinyl based products.

Suspect ACM were sampled (if identified) by Dirt Doctors Pty Ltd, where required, in accordance with Australian Standard AS 4964-2004 Method for the qualitative identification of asbestos in bulk samples. Where taken, representative samples of suspected ACM are placed into sealable clip-lock plastic bags and were analysed by an external NATA accredited laboratory for the presence of asbestos by Polarized Light Microscopy.

3.3 Synthetic Mineral Fibre Materials

Synthetic Mineral Fibre describes fibrous materials used in production of textiles, including plastics and electrical insulation as well as reinforcement of concrete, plaster and plastic materials. SMF has also been used in fire-rating products and insulation. SMF can be made from metal, glass, alumina, rock and silica.

The assessment of SMF materials was carried out by visually identification of SMF with reference to Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC:2006 (1990)]. Where taken, representative samples of suspected SMF are placed into sealable clip-lock plastic bags and were analysed by an external NATA accredited laboratory for the presence of SMF by Polarized Light Microscopy.

3.4 Polychlorinated Biphenyls

Polychlorinated Biphenyls (PCBs) have predominantly been used in fluorescent light capacitors.

Light Fixtures were disassembled as part of the survey. The assessment for the potential presence of PCBs capacitors was made based on a visual assessment of the age and condition of the light fixtures. Furthermore, the PCB capacitor serial numbers were cross referenced with Australian and New Zealand Environment and Conservation Council (ANZECC) document ‘Identification of PCB-containing Capacitors 1997’.

3.5 Paint Containing Lead

Lead-based paint was used in in early construction and production activities (predominantly pre-1965).

Suspected lead based paint systems were sampled, where required, in accordance with AS4361.2 – 1998 Guide to Lead Paint Management – Part 2: Residential and Commercial Buildings (AS4361.2). Where taken, representative samples of paint are collected and placed in a clip-lock sealable bag and then analysed by an external NATA accredited Laboratory for determination of the amount of lead by ICP-AES test method.

AS4361.2 defines in which the lead content is in excess of 1.0 per cent by weight of the dry film as determined by laboratory testing to be lead containing paint. Results are expressed in per-cent weight per weight.

3.6 Dust Containing Lead

Suspect lead containing dust was sampled (if identified) in accordance with AS4361.2. An area to be sampled totaling 0.9m^2 is marked out on the surface where accumulated dust was located. A wet wipe is used to collect the sample.

Where taken, representative samples are collected and places in a clip-lock sealable bag and then analysed by and external NATA accredited laboratory for determination of the amount of lead by Atomic Absorption Spectroscopy.

For the purpose of this survey and interpretation of results, samples collected from the spaces will be compared to 8mg/m^2 adopted clearance criteria as indicated by section 5.0 of AS4361.2.

3.7 Management of Lead During Demolition

Owners of a residential building, s classified by the National Construction Code Class 1a, may undertake led abatement work on their own dwelling. For other class of buildings, if the removal exceeds 10m^2 of lead paint surface, in a 12-month period, abatement should be undertaken by a lead abatement contractor who must be trained and certified to conduct lead-based paint activities.

Removal of lead paint has the greatest potential to generate dust waste, resulting in increased potential impact on human health and the environment. Methods to minimise dust generation include:

- Wet Scraping and Wet Sanding;
- On/Off-site Chemical Stripping; and
- Heat Gun and Scraper.

Following removal of paint contaminated material, all dust should be removed and the area re-inspected by an environmental consultant to confirm the successful treatment of the lead containing material. This includes, but not limited to, soil samples of the site in-situ material and surface dust, which are to be analysed by a NATA accredited laboratory, with results analysed in accordance with the relevant assessment criteria. Samples should be collected within 24hrs of completion of work to minimise potential contamination migration.

Methods of monitoring contamination and reducing exposure as a result of lead dust migration include, but not limited to:

- Airborne exposure to lead using air monitors placed within the workplace and site boundaries;
- Use of appropriate PPE and equipment;
- Good housekeeping and appropriate worker training;
- Work areas sectioned off and signs posted, identifying current site activities;
- Appropriate ventilation; and
- Continuous project monitoring by adequately trained personnel.

The principal contractor is responsible for ensuring that site personnel are aware of current site activities and that they are appropriately trained in correct workplace procedures relating to proposed work place activities.

4 Inaccessible Areas

This report only comments on the areas physically inspected by the Dirt Doctors Pty Ltd. Where areas and/or locations could not be accessed due to health and safety issues or by secured locking mechanisms these have been noted and can found in **Appendix A**. It is possible that hazardous building materials may exist inaccessible areas and/or locations of the site which have not been surveyed including areas which remained securely locked.

Where areas have been excluded from the survey or where only limited or visual access has been possible they should be assumed to contain hazardous building materials until an additional and separate assessment indicates otherwise.

5 Unexpected Finds and Emergency Procedure

The unexpected finds and emergency procedure can be found in **Appendix E**. This document outlines the steps and processes that must be followed on site when an emergency and or unexpected hazardous building material is found.

6 Survey Findings & Recommendations

Please find attached in **Appendix A,** the Hazardous Building Materials Register noting the findings and recommendations for the remediation of hazardous building materials found on site prior to proposed demolition.

7 Demolition

Buildings upon the site are proposed for demolition. Given the specialist nature of demolition work, a demolition management plan should be prepared to collate the key information relevant to the work into a single document, including some information relevant to Work, Health and Safety.

A demolition management plan should not duplicate a WHS management system or Safe Work Method Statement (SWMS) but may reference them.

A demolition management plan may include:

- the location of the site on which the structure to be demolished stands
- the overall height of the structure above ground level and the least distance from the structure to each site boundary
- the type of building (occupancy class), its structural support system and the principal materials of its construction
- the proposed methods of demolition including the number and types of major items of plant
- the proposed methods for handling and disposing of demolished materials and, in particular hazardous materials
- the proposed methods of controlling and maintaining access and egress to workplace
- the proposed sequence of carrying out the demolition works and an estimate of the time (in days) it is likely to take to complete all of each of the stages of the work
- the proposed hoardings, scaffolding and fencing and of any overhead sidewalk protection (subject to Council consent)
- any other plans, illustrations, written documents, or specialist reports as may be necessary to support the proposed methods of work or protective structures
- traffic management arrangements, which includes managing vehicles and mobile plant hazards in relation to operation at the workplace and interaction with the public.
- the location and condition of the following underground essential services including:
    - electricity
    - drainage and sewerage
    - gas
    - water
    - communications cables (for example, telephone, radio and television relay lines)
    - hydraulic pressure mains
    - liquid fuel lines
    - lubrication systems
    - process lines (chemical, acid)
    - above ground essential services
    - hazardous materials, including asbestos (this report)
    - underground structures such as a basement, cellars, or storage tanks
    - any confined spaces where work will be undertaken
    - the general condition of structures on adjoining properties, particularly where these are close to or on the boundaries of the demolition workplace
    - the effect demolition may have on people working in adjoining properties or seeking access to and egress from those properties, and
    - the emergency arrangements, which should include equipment for the rescue of injured persons

8 Waste Management

Documentation such as receipts for the transport and disposal of waste and recycling materials from the site must be retained. This documentation must be made available to the recipient on request in compliance with Part 1: Classifying Waste, Waste Classification Guidelines published by the DECC NSW (2014).

The removal and transport of ACM must be conducted by an SafeWork NSW Licensed Asbestos Removal Contractor, and the ACM must be disposed of at a lawful facility that is licensed to receive 'special waste' asbestos. Disposing of demolition waste from the subject site must be conducted in accordance with the requirements of SafeWork NSW, NSW Protection of the Environment and Operations Act 1997 and any requirement of the consent authority for the proposed development upon the subject site.

9 Bulk Excavation

At completion of building demolition; bulk excavation works are proposed (subject to Council consent). Given the specialist nature of excavation work, a competent and qualified environmental consultant must conduct site investigations, sampling and NATA testing to ensure the vacant property is free from hazardous building material prior to bulk excavation works.

The Client must (separate from this report) commission the preparation of a material (waste) classification report for soils prior to offsite disposal in accordance with EPA NSW Part 1: Classifying Waste, Waste Classification Guidelines published by the DECC NSW (2014).

In certain circumstances and subject to policy of the facility or location receiving the soils. The receiving entity may need to conduct a site inspection prior to the soils type being excavated and delivered to them by the Contractor.

Further during bulk excavation works of each soils type (subject to Council consent) a validation report for the site maybe required prior to new building works.

Appendix A:
Hazardous Building Materials Register

Hazardous Building Materials Register

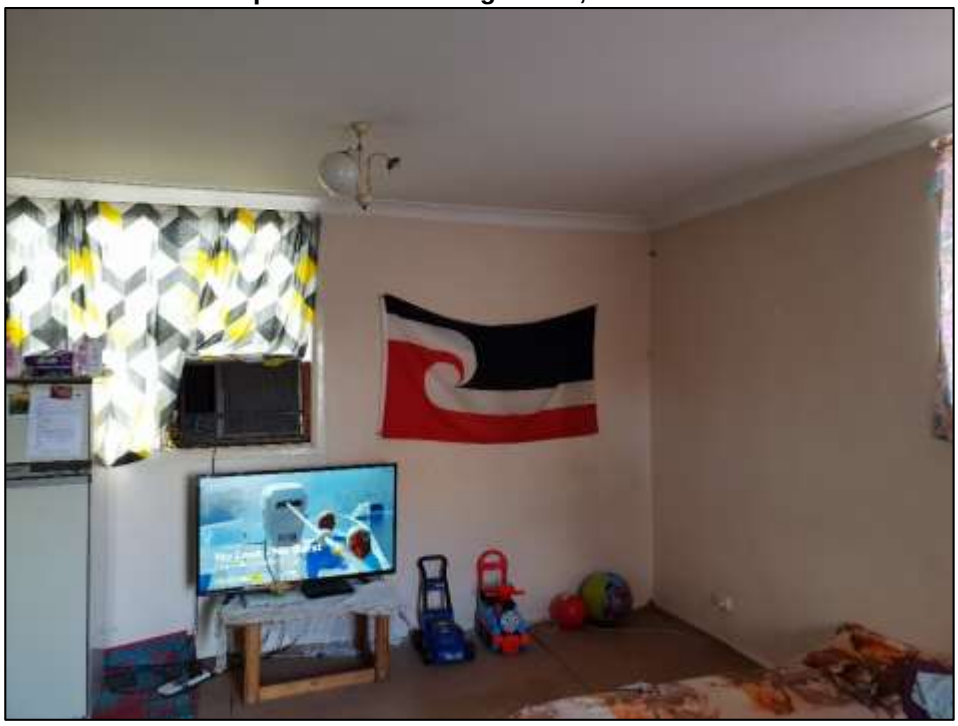
Site: 101 Nuwarra Rd, Moorebank NSW		**Hazmat Register Summary**						**Survey Conducted by:** M.Tofler
Inspection Date: 13 February 2019	**Building Reference:** Residential/commercial				**Client:** OAR2			**Asbestos Analysis:**
Location	**Building Component or land**	**Asbestos Detected** CHR, AMO, CRC, SMF, NAD	**ID**	**Photo**	**Risk Assessment**			**Comments & Recommendations**
					Analysed	**Friable or Non-friable**	**Priority Risk Rating**	**Material Condition**	
Structures – Subfloor	Packing	-			N	ND	2	-	Subfloor inaccessible during site inspection. Recommendation during demolition works (if present) emu pick ACM packers from subfloor; engage Class B Asbestos Removal Contractor to remove ACM and dispose at lawful facility. All works as per the Code of Practice How to Safely Remove Asbestos September 2016 (SafeWork NSW). At completion of asbestos removal works a Competent Person is to conduct a clearance inspection and issue a clearance certificate for the works as per the WH&S Regulation 2017.

Structures – internal – external	Light fittings	PCB	-		-	-	-	-	No PCB's found in light fittings by visual assessment
Structures – Internal – External	HWS	SMF	-		N	NF	4	good	Hot water service (HWS) tank insulation is suspected synthetic mineral fibre (SMF). Recommendation engage competent and experienced contractor to remove HWS insitu prior to demolition works. All works as per Code of Practice for the safe use of SMF (NOHSC:2006 (1990)). HWS/SMF to be disposed of at lawful facility licensed to receive SMF.
Structures – Internal	Ceiling Insulation	SMF	-		N	NF	4	good	Ceiling insulation is suspect synthetic mineral fibre (SMF). Recommendation engage competent and experienced contractor to remove SMF by hand prior to demolition works. Use H Class HEPA vacuum to clean ceiling cavity prior to demolition works. All works as per Code of Practice for the safe use of SMF (NOHSC:2006 (1990)). SMF to be disposed of at lawful facility licensed to receive SMF.
Structures – External	Eaves	ACM	-		N	NF	3	Good	The external eaves are suspected ACM. Recommendation engage Class B Asbestos Removal Contractor to remove and dispose at lawful facility. All works as per the Code of Practice How to Safely Remove Asbestos September 2016 (SafeWork NSW). Engage Licensed Asbestos Assessor to undertake a clearance inspection and issue a clearance certificate as per the WH&S Regulation 2017 prior to proposed demolition.

Appendix B:
Photographs

Shop Fronts, Viewed from Nuwarra Road

Representative Living Room, Brick Walls



Representative Kitchen

Representative Bathroom

ACM in Eaves

ACM in Eaves

ACM in Eaves

ACM in Eaves

Storage Shed, Contains General Household Waste

Outdoor Amenities

Shop Internal

Shop Internal

Restaurant Internal

Rear of Complex

Rear of Complex

Appendix C:
NATA Laboratory Results

Appendix C:
Risk Assessment Criteria

The Risk Assessment Criteria

To assess the health risk posed by the presence of hazardous building materials (the material), relevant factors must be considered, these factors include:

- Proximity to workers and the likelihood the material is to be disturbed by workers
- Friability of the material particularly for ACM and SMF
- The condition of the material i.e. evidence of physical damage or influence of external factors such as weather conditions and water
- The risk of exposure to workers when working within close proximity to the material

Where these factors have indicated that there is a possibility of exposure to airborne fibres, this provides the consultant with a risk priority rating and the ability to provide the most appropriate recommendations for repair, maintenance or removal of the material.

Material Condition

The Condition of the hazardous building material identified during the audit is usually reported as either being very good, good, fair, or poor. The meanings of each category rating are as follows:

- **Very Good Condition:** Refers to the material being undamaged and in "original" condition with no deterioration, and sealed i.e. no exposed asbestos fibres
- **Good Condition:** Refers to the material being undamaged and in near "original" condition with minimal deterioration, minor cracked edges, flaking paint or sealant i.e. not exposing asbestos fibres
- **Fair Condition:** Refers to the material exhibiting minor damage including breaks, cracks, deterioration, holes, etc. and some surface damage potentially exposing asbestos/SMF fibres
- **Poor Condition:** Refers to the material being severely damaged associated debris and dust is located within close proximity, the material is weathered and broken down with the potential for exposure to workers.

Friability

The friability of ACM and SMF describes the ease of which asbestos or SMF fibres can be released in it constructed condition. This risk criterion does not relate to PCB's or lead containing paint.

- **Friable:** Any ACM which may become crumbled, pulverised or reduced to powder by hand pressure when dry. Examples of products include fire door core insulation, sprayed insulation, pipe lagging. Generally, this type of material contains more asbestos fibres and is considered more hazardous than non-friable asbestos products
- **Non-Friable:** Also known as bonded asbestos. It describes ACM that typically comprise of asbestos fibres tightly bound in a stable product matrix. Examples of non-friable asbestos products include super six roofing, eaves linings and electrical backing boards
- **Un-bonded SMF:** Has no adhesives or cements and the SMF is loose material packed into a package. The un-bonded form can be packed loose or mixed with adhesives or cements before, or during, installation. Examples of products include rockwool, sprayed insulation and damaged SMF materials

- **Bonded SMF:** Is where adhesives or cements have been applied to the SMF before delivery and the SMF product has a specific shape. Examples of products include sarking insulation, insulation batts and pre-form pipe lagging.

Likelihood of disturbance of the material

Hazardous building materials can be classified as having low, medium, or high disturbance potential when in close proximity to workers. This means that workers, contractors or the general public can get within close proximity of a material potentially exposing themselves to the material.

- **Low:** Low accessibility describes a material that cannot be easily disturbed, such as materials in property voids, set ceilings and where work activities within the area are unlikely to disturb the material
- **Medium:** medium accessibility describes a material that is visible but normal access is impeded by physical barriers, such as materials behind cladding material or present in a ceiling space or are height restricted. Where work activities within the area are likely to impact the material
- **High:** High accessibility describes a material that can be easily accessed or damaged due to their close proximity to workers, contractors, general public, and where the work activities are going to impact on the material with high occupancy within the area.

Risk Matrix

To determine the level of risk a material has, the risk matrix is used. The risk rating is based on the condition of the material and the likelihood of disturbing the material.

Condition	High *(likelihood of disturbance)*	Medium *(likelihood of disturbance)*	Low *(Likelihood of disturbance)*
Poor	Very high	High	Medium
Fair	High	Medium	Medium
Good	Medium	Medium	Low
Very Good	Medium	Low	Low

Level of Risk

The level of risk for hazardous building material identified is described below:

- **Low Risk:** A low risk ranking describes a material that pose a low health risk to workers, contractors and the general public providing the materials stay in a stable condition, for example a material that is in good condition and has low accessibility
- **Medium risk:** A medium risk ranking applies to a material that poses an increased risk to workers, contractors and the general public in the area, however are in a semi stable condition with minor amounts of damaged
- **High Risk:** A high risk ranking describes a material that poses a high risk of exposure to workers, contractors and the general public working in the area of the material. Generally, a material with a high risk ranking are in a poor condition
- **Very High Risk:** An area where a material is present and the work area is not suitable for occupancy. Urgent remediation is required i.e. within 24 hours of identification of the hazardous building material. There is a likelihood of imminent risk of harm to workers. Generally, sites that require demolition or refurbishments works and the identified hazardous building material are to be impacted on, warrant a very a high-risk rating.

Priority Risk Rating

The priority risk rating is determined from the likelihood of disturbing the material, the condition of the material and the level of risk to workers, contractors and the general public. The priority risk rating system ranges from 1 to 4, with priority risk rating 1 being the highest priority risk rating and 4 being the lowest.

Priority Risk rating 1: Hazard with High Risk Potential

Work area has a hazardous building material, which are either damaged or are being exposed to continual disturbance or potential to expose workers to the material. Due to these conditions there is an increased potential for exposure and to contaminate the work areas.

Recommendations usually includes isolation through physical barriers, air monitoring be conducted and the hazardous building material is promptly removed by and appropriately licensed asbestos contractor or similar. After abatement of the hazardous material a re-inspection, or clearance inspection, should be conducted by a licensed asbestos assessor or competent person to confirm that the area has been satisfactorily cleared of the material.

Priority Risk rating 2: Hazard with Medium Risk Potential

Work area has hazardous building material with a potential for disturbance due to the following conditions:

1. Material, friable, or non-friable, bonded or un-bonded, has been disturbed or damaged and its current condition is unstable; or
2. The material, friable or non-friable, bonded or un-bonded is accessible and can when disturbed, present short term exposure risk to worker, contractor and the general public; or
3. The material, friable or non-friable, bonded or un-bonded, could pose and exposure risk if workers, contractors or the general public are in close proximity.

Recommendations usually include remediation removal measures to be taken within a three-month period or less and management through the appropriate management plans and systems.

Priority Risk 3: Hazard with low risk Potential

Work area has hazardous building material where:

1. The condition of any hazardous building material is stable (including friable ACM and unbounded SMF) and has a low potential for disturbance; or
2. The hazardous building material is in a non friable, bonded or in fair condition however has been damaged but does not present an exposure risk unless but, drilled, sanded, or otherwise abraded.

Recommendations include remediation of the hazardous building material and ongoing management of the friable/un-bonded and remediated non-friable/bonded materials.

Priority Risk Rating 4: Hazard with Very Low Risk Potential

The hazardous building material is non-friable ACM, bonded SMF, PCB and lead containing paint in good condition. It is most unlikely that the material can be disturbed from workers, in the work area. It is considered the material poses a negligible health risk.

These hazardous building materials should be maintained in good condition and the condition monitored in accordance with the hazardous materials register and the hazardous material management plan (this report).

Appendix D:
Unexpected Finds and Emergency Procedure

1. In the event of an unexpected find of suspect asbestos stop work, isolate the immediate area and contact a licensed asbestos assessor

2. Licensed asbestos assessor is to conduct a site inspection and provide the client an assessment report

3. Subject to sampling and NATA laboratory report the licensed asbestos assessor shall provide a written recommendation on the remediation of asbestos
    a. If the sample returns a result of no asbestos detected the licensed asbestos assessor shall advise the Contractor to reopen the suspect location without the need for any remediation

4. The Contractor as required shall perform the works as directed in item 3 above

5. The licensed asbestos assessor shall at completion of works conduct a site inspection and issue a clearance certificate