From: Steele, Peter
To: Matthews, David; Matthews, David; McKinnon, Margaret; Parkinson, Andrew; Short, Paul; [redacted] Alford, Robert; Stedman, Andrew (Health)
Cc: Kneipp, Jason (Health); Hooper, Richard
Subject: Hazardous Materials Expert Panel - ACTION #2
Date: Monday, 21 December 2020 12:29:00 PM
Attachments: 11181_YarralumlaPrimary_LeadDust_20200724.pdf
T01035_LPMP_Yarralumla_20191125 (002).pdf
T01035_LPMP_Yarralumla_20191125.pdf

OFFICIAL

Good afternoon,

The attached documents are being provided per ACTION #2 of our December the 8th meeting –

ACTION Number	Responsible Member	ACTION
2.	**PSt/ Secretariat**	Directorate to distribute recent environmental reports that includes standards used for testing.

The PDF documents attached are:

Document File Name	Document Title	Notes
11181_YarralumlaPrimary_LeadDust_20200724	Lead Dust Investigation – Yarralumla Primary School and Montessori Preschool – July 24 2020	Section 5 – Page 10 covers the clearance levels used in testing
T01035_LPMP_Yarralumla_20191125	Lead Paint Management Plan – Yarralumla Primary & Preschool – November 2019	
T01035 Yarralumla Primary School and Preschool Lead Paint Survey 20191015	Lead Paint Survey – Yarralumla Primary and Preschool – September 2019	

A follow up meeting will be scheduled out of session to discuss these documents further, including the levels used in the testing.

Please let us know if you would like to discuss further. [redacted] and be in touch shortly after.

Hope you all have a safe and happy holiday period.

Regards,

Pete

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Lead Dust Investigation

Yarralumla Primary School and Montessori Preschool

24 July 2020

Certificate of approval for issue of documents

Document Name	Lead Dust Investigation – Yarralumla Primary School and Montessori Preschool		
Report Issue Date	31/07/2020	**Job Number**	11181
Client	ACT Property Group		
Surveying			
Robson Environmental	Robson Environmental	Robson Environmental	Robson Environmental
Report Preparation		**Reviewed**	**Approved**
Robson Environmental	Robson Environmental	Robson Environmental	Robson Environmental

1 Executive Summary

1.1 Sample Results

The investigation of surface lead dust contamination throughout Yarralumla Primary School and Montessori Preschool on 24 July 2020 found surface samples in 22 of the 94 sampled locations returned results above the laboratory limit of detection (23%) and 13 locations returned results above the accepted project criteria of 0.11 mg/m^2 (14%).

If locations in the Gambarri Centre and the Montessori Preschool which may have been contaminated by recent lead disturbance works are excluded from analysis, 14 of 79 sample locations in the Primary School and After-School Care buildings returned a result over the laboratory limit of detection (18%) and 7 samples returned a result that was above the project acceptance criteria of <0.11mg/m^2 (9%).

1.2 Contamination Assessment

In general, the samples in the Primary School and After-School Care that showed results above the acceptance criteria were areas which are unlikely to be regularly cleaned, and which are not expected to be 'high touch' surfaces. While these results do not necessarily indicate widespread lead contamination at a high concentration throughout the entire school, results do indicate the potential for surfaces to become significantly contaminated over longer periods of time without cleaning. Nevertheless, it does seem that most surface lead dust contamination has come from discrete events of lead paint disturbance with inadequate controls, rather than from widespread deterioration of painted surfaces.

The primary goal of the sampling was to determine the range of 'normal' background lead dust contamination in this school. These results show that while there is lead contamination throughout the school, most areas are below the project acceptance criteria, and 'below detection limit' results in post-remediation clearance testing should be achievable with good cleaning technique.

Given the significant quantity of lead paint remaining in the building as well as the vulnerable population of occupants, lead paint should be diligently managed in accordance with the Lead Paint Management Plan during normal use and when any maintenance or refurbishment works are conducted.

1.3 Exposure Risk Assessment

While there is inherently an exposure risk from lead dust in these building, because of the presence of lead paint (particularly lead paint in poor condition), measured lead dust levels were not elevated in most locations in the main Primary School building and the detached Primary School building. Most samples from 'high touch' surfaces like desks, tables, (most) carpet and toys did not have detectable concentrations of lead. The exposure risk for lead in these buildings is not expected to be greatly elevated over the normal background exposure risk.

In the Gambarri Centre, the Montessori Preschool, and the After School Care buildings, measured dust levels were generally higher, and it is difficult to say if this is due to recent activities in these areas which have disturbed lead and contaminated surfaces, or because the normal background levels is higher. It was reported that the Staff Office in the Gambarri Centre was used by contractors during recent lead-disturbance works, and that may be the reason results are elevated in this area.

If these results represent normal conditions in these buildings, it is possible that the exposure risk for lead in these buildings could be somewhat elevated over the normal background exposure risk. In particular the elevated results in the After School Care is of concern because, to the best of our knowledge, lead paint has not recently been disturbed in this building.

1.4 Recommendations

1. It was reported that the Staff Office in the Gambarri Centre was used by contractors during recent lead-disturbance works, and that may be the reason results are elevated in this area. Remediation cleaning following the method given in Robson report 11181_CleaningLeadMethod_YarralumlaPrimarySchool_20200724 should be undertaken in this area.
2. Remediation cleaning and clearance testing in areas affected by recent lead disturbance activities should be completed as per previous recommendations.
3. A 'one-off' general clean should be conducted throughout the entire school to reduce surface lead dust concentrations. It is recommended that HEPA vacuuming and wet wiping be undertaken.
4. Follow up testing in six months in the Gambarri Centre, the Montessori Preschool, and the After School Care buildings should be undertaken to determine if the high results seen in this assessment represent normal background levels in these buildings.
5. The frequency and scope of cleaning throughout this school should be increased to keep background lead dust levels to as low as reasonably practical.
6. It is recommended that the controls given in the Lead Paint Management Plan for Yarralumla Primary School [T01035_LPMP_Yarralumla_20191125] be reviewed and followed for all works which disturb lead paint, as disturbance of lead paint was identified to be the primary cause of high surface lead dust results.
7. Compliance with these controls should be made mandatory for all contractors engaged to undertake any works which disturb lead paint.

2 Introduction

Robson Environmental Pty. Ltd. (Robson) undertook an investigation of surface lead dust contamination throughout Yarralumla Primary School and Montessori Preschool ('the school') on 24 July 2020 on behalf of ACT Property Group.

2.1 Objective

The purpose of the inspection was to assess the background levels of lead contamination in dust on surfaces throughout Yarralumla Primary School and Montessori Preschool to determine:

- Levels of lead dust contamination throughout the school; and
- Potential risk to health from exposure to measured levels of lead dust.

2.2 Scope

The assessment was conducted throughout Yarralumla Primary School and Montessori Preschool and consisted of:

- Collection of representative samples from surfaces to assess the background levels of lead contaminated dust throughout the buildings, as per AS/NZS 4361.2:2017 *Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings*;
- Provision of advice on the potential health risks posed to occupants by the lead levels identified from sampling; and
- Advice on rectification, remediation and future management of lead paint.

Areas known to have been recently contaminated with lead dust from removal of window frames painted with lead paint from 13 to 19 July 2020 in the Gambarri Centre and Montessori Preschool buildings were generally excluded from this assessment. This investigation is to determine the background levels of lead contaminated dust throughout the entire school, and is separate to the remediation works required after the removal of the lead painted window frames.

3 Background

Lead (as lead carbonate) is found extensively in paints used in homes as well as in commercial and industrial buildings built before 1970 (Standards Australia, 2017). Lead from lead-containing paint may present health exposure risks if it becomes mobile in the environment or is ingested.

A survey of the lead paint at Yarralumla Primary School and Montessori Preschool undertaken in September 2019, found that lead paint was widespread throughout the school, and was in poor condition in some places (see report T01035 Yarralumla Primary School and Preschool Lead Paint Survey Report, issued 15 October 2019). A lead paint management plan for Yarralumla Primary School, Gambarri Centre and Montessori Preschool was developed based on this survey and was issued on 27 November 2019.

Recent sampling results during removal of lead-painted window frames and rectification cleaning in the Montessori Preschool returned multiple results above the laboratory detection limit with some above the project acceptance criteria. Difficulty in cleaning surfaces to meet project acceptance criteria prompted questions regarding the inherent lead contamination in the school from the lead painted surfaces remaining in-situ.

4 Sampling Method

Surface dust samples were taken at representative locations throughout the interior of the premises generally in accordance with the method from Appendix C of AS/NZS 4361.2: *Guide to hazardous paint management Part 2: Lead paint in residential, public and commercial buildings* (2017), however the specific sampling method was based on NIOSH Method 9100 *Lead in Surface Wipe Samples* (1996), because the guidance material used in the development of the project acceptance criteria was developed based on this method. This Australian Standard method was not used as it was not appropriate for comparison against criteria based on use of an alternate sampling methodology.

The majority of samples were taken using a 15cm x 15cm (225 cm^2) sample area, but the size and shape of some sample locations necessitated using different sample area dimensions.

Sample locations were chosen to provide a representation of background lead contamination throughout the premises. They include both hard and soft furnishings/surfaces, areas likely to be regularly cleaned, and areas likely to be rarely cleaned. Figure 1 to Figure 7 below show some example sample locations.

Full sampling location details are shown in Table 1 and Appendix 1. All samples were transported to [redacted] under Chain of Custody (COC) documentation for analysis.

Table 1: Surface swab sampling locations on 24 July 2020

Sample Number	Location	Surface	Surface Area (m^2)
H2031	Gambarri Centre – 014	Second shelf	0.0225
H2032	Gambarri Centre – 014	Inside storage unit shelf	0.0225
H2033	Gambarri Centre – 014	Pinboard	0.0225
H2034	Gambarri Centre – 014	Top of corner cupboard	0.0225
H2035	Gambarri Centre – 008 – Counsellor's Office	Carpet next to piano	0.0225
H2036	Gambarri Centre – 008 – Counsellor's Office	Front of air con unit	0.0225
H2037	Gambarri Centre – 002 – Staff Office	Behind monitor	0.0225
H2038	Gambarri Centre – 002 – Staff Office	Photocopier	0.4476
H2039	Gambarri Centre – 002 – Staff Office	Behind microwave	0.0225
H2040	Gambarri Centre – 002 – Staff Office	Arms of chair	0.0616
H2041	After School Care – 002	Top of cupboard	0.0225
H2042	After School Care – 002	Rug	0.0225
H2043	After School Care – 002	Piano cover	0.125
H2044	After School Care – 002	Table	0.0225
H2045	After School Care – 009	Side of bookcase	0.0225
H2046	After School Care – 006 – Kitchen	Fridge handle	0.0345
H2047	After School Care – 005 – Store	Tennis racket shelf	0.0225

Sample Number	Location	Surface	Surface Area (m^2)
H2048	After School Care – 005 – Store	Shelf behind bikes, parachute	0.0225
H2049	Primary School – 054 – Canteen	Shelf above sink	0.0225
H2050	Primary School – 054 – Canteen	Top of fridge	0.0225
H2051	Primary School – 055 – Canteen Pantry	Floor	0.0225
H2052	Primary School – 053 – Hall	Top of chair	0.0225
H2053	Primary School – 053 – Hall	Floor near window	0.0225
H2054	Primary School – 053 – Hall	Floor next to skirting board	0.0225
H2055	Primary School – 052 – Hall side store (left of stage)	Top of piano	0.0225
H2056	Primary School – 051 – Hall	Stage floor	0.0225
H2057	Primary School – 049 – Corridor	Floor	0.0225
H2058	Primary School – 056 – Art Room	Bench	0.0225
H2059	Primary School – 056 – Art Room	Top of cupboard	0.0225
H2060	Primary School – 056 – Art Room	Green carpet square	0.0225
H2061	Primary School – 058 – Studio	Bench top	0.0225
H2062	Primary School – 057 – Store	Top of beanbag under window	0.0225
H2063	Primary School – 057 – Store	Top of shelves	0.0225
H2064	Primary School – 049 – Corridor	Carpet under window	0.0225
H2065	Primary School – 047 – Bathroom	Floor	0.0225
H2066	Primary School – 044 – Storeroom	Shelf	0.0225
H2067	Primary School – 042 – Uniform Shop	Shelf	0.0225
H2068	Primary School – 041	Top of PC Locks storage unit	0.0225
H2069	Primary School – 041	Carpet under pillar	0.0225
H2070	Primary School – 049 – Corridor	Floor	0.0225
H2071	Primary School – 002- Atrium	Carpet	0.0225
H2072	Primary School – 004 – Bathroom	Floor	0.0225
H2073	Primary School – 007	Top of desk	0.0225
H2074	Primary School – 008	Carpet near door	0.0225
H2075	Primary School – 008	Fabric chair	0.0225
H2076	Primary School – 008	Top of cupboard	0.0225
H2077	Primary School – 007	Rug – fish #7	0.0225
H2078	Primary School – 009	Pinboard - red	0.0225
H2079	Primary School – 013	Top of bookcase	0.0225
H2080	Primary School – 013	Top of desk	0.0225

Sample Number	Location	Surface	Surface Area (m^2)
H2081	Primary School – 014	Hand washing bench	0.0225
H2082	Primary School – 014	Carpet in corner under window	0.0225
H2083	Primary School – 015	Carpet next to sliding door	0.0225
H2084	Primary School – 018	Child's desk	0.0225
H2085	Primary School – 018	Plush toy	0.0225
H2086	Primary School – 01	Desk behind monitor	0.0225
H2087	Primary School – 027 – Kitchen	Bench	0.0225
H2088	Primary School – 028	Rug (Australian animal)	0.0225
H2089	Primary School – 026	desk near corner window	0.0225
H2090	Primary School – 024 – Library	top of bookcase	0.0225
H2091	Primary School – 024 – Library	desk	0.0225
H2092	Primary School – 024	Shelf	0.0225
H2093	Primary School – 017	Child's desk	0.0225
H2094	Primary School – 017	Toy theatre booth under window	0.0225
H2095	Primary School – 016	Handwashing basin	0.0225
H2096	Primary School – 016	Rug (duck picture)	0.0225
H2097	Primary School – 012	Soft chair under window	0.0225
H2098	Primary School – 012	Top of shelf	0.0225
H2099	Primary School – 011	Top of built in cupboard	0.0225
H2100	Primary School – 011	Top of corner cupboard	0.0225
H2101	Primary School – 011	Carpet	0.0225
H2102	Primary School – 007	Carpet near door frame	0.0225
H2103	Primary School – 010	Child's table	0.0225
H2104	Primary School – 010	Carpet	0.0225
H2105	Primary School – 006 – Cleaner's Room	Floor near mops	0.0225
H2106	Primary School – 028 – Sick Bay	Floor corner	0.0225
H2107	Primary School – 028 – Sick Bay	Chair	0.0225
H2108	Primary School – 027	Top of binder under window	0.0225
H2109	Primary School – Corridor	Carpet under window	0.0225
H2110	Primary School – 031 – Deputy Principal	Behind monitor	0.0225
H2111	Primary School – 032 – Executive Teacher	Behind monitor	0.0225
H2112	Primary School – 035 – Staff Room	Soft chair under window	0.0225

Sample Number	Location	Surface	Surface Area (m^2)
H2113	Primary School – Detached Classrooms – 035	Desk under window	0.0225
H2114	Primary School – Detached Classrooms – 036	Storage unit adjacent window	0.0225
H2115	Primary School – Detached Classrooms – 036	Carpet in corner behind T.V.	0.0225
H2116	Primary School – Detached Classrooms – 036	Desk under internal window	0.0225
H2117	Primary School – Detached Classrooms – 037	Shelf adjacent window	0.0225
H2118	Primary School – Detached Classrooms – 037	Couch under window	0.0225
H2119	Primary School – Detached Classrooms – Corridor	Carpet	0.0225
W2265	Montessori Preschool – Central Bathroom	Top of cupboard adjacent first aid	0.0225
W2266	Montessori Preschool – Central Bathroom	Top of partition wall	0.0225
W2267	Montessori Preschool – Central Bathroom	Toilet cistern	0.0225
W2268	Montessori Preschool – 011 – Store	Gem rocks shelf	0.0225
W2269	Montessori Preschool – 012 – Office	Bookshelf (animals/family/ friends)	0.0225
H2120	Field Blank		
H2121	Field Blank		
H2122	Field Blank		
H2123	Field Blank		
H2124	Field Blank		

Figure 1: Sample from soft furnishing

Figure 2: Sample from plush toy

Figure 3: Sample from child's desk

Figure 4: Sample from carpet

Figure 5: Sample from staff desk

Figure 6: Sample from dusty shelf

Figure 7: Sample from clean shelf

5 Assessment Criteria

The previous version of Australian Standard AS4631.2:1998 (*Guide to lead paint management, Part 2: Residential and commercial buildings*) had criteria levels for clearance after lead paint management activities of 8 mg/m^2 for exterior surfaces, 5 mg/m^2 for interior window sills, and 1 mg/m^2 for interior floors. This standard covered domestic settings, which would be expected to have vulnerable people present, including small children at increased risk of ingesting lead particles.

The AS4631.2 standard was updated in 2017 (AS 4361.2-2017) and no longer includes acceptable levels for surface dust lead levels after cleaning activities, instead it specifies that *"lead surface dust loading should not exceed the limits provided by the relevant statutory authority with jurisdiction over the area within which the work has been carried out"*.

Neither the ACT nor the Commonwealth jurisdictions have criteria levels for surface lead after clearance activities. However, AS 4361.2-2017 also states that *"if there are no relevant legislated limits, project acceptance criteria should be established"*.

The U.S. Department of Housing and Urban Development (HUD), Office of Lead Hazard Control and Health Homes (OLHCHH), released *the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* in 2012, which gives acceptable lead dust clearance action levels following lead paint removal (Table 15.2) as follows:

- Bare and carpeted floors: <0.43 mg/m^2;
- Interior windowsills: <2.70 mg/m^2; and
- Window troughs: <4.30 mg/m^2.

However, following additional research on adverse effects of lead exposure in children and evidence of feasibility of lower clearance levels, the OLHCHH established more stringent lead clearance action levels in 2017, as follows:

- Interior floors: <0.11 mg/m^2;
- Porch floors: <0.43 mg/m^2;
- Windowsills: <1.08 mg/m^2; and
- Window troughs: <1.08 mg/m^2.

The lead dust clearance action levels set by the OLHCHH above would be expected to provide a high level of protection against exposure risks for workers in an occupational setting and for the public accessing this area. These clearance levels are intended to protect small children (who are inherently more susceptible to lead poisoning due to their small body size and factors related to their growth) crawling on the floor in a domestic setting, who would be expected to be ingesting lead dust from hands, etc.

As such, adoption of the OLHCHH lead dust clearance action levels as shown in Table 2 as a criteria level to assess possible contamination, would provide a high degree of protection against lead exposure risks for workers and visitors. An additional criteria level for "Other Exterior Surfaces", based on 25% of the previous 8mg/m^2 criteria level for exterior surfaces from AS4631.2-1998, is also proposed for clearance assessment.

For this assessment a project acceptance criteria of <0.11 mg/m^3 has been used for all sampled locations, however it should be noted that this criteria level is intended for floors and is probably somewhat too high for high touch surfaces or surfaces where there is a heightened risk of ingestion such as eating or food preparation surfaces.

Table 2: Lead Dust Clearance Criteria Levels for various surfaces

Surface	Lead Dust Clearance Criteria Level
Interior Floors	<0.11 mg/m^2
Porch Floors	<0.43 mg/m^2
Windowsills (Interior)	<1.08 mg/m^2
Window Troughs (Exterior)	<1.08 mg/m^2
Other Exterior Surfaces	<2.00 mg/m^2

6 Results

Surface samples in 22 of the 94 sampled locations returned results above the laboratory limit of detection (23%) and 13 locations returned results above the accepted project criteria (14%), as shown in Table 3 (which only shows results that were above the laboratory limit of detection). Plans attached in Appendix 1 show the locations of all samples along with classification of the measured surface lead dust.

Sampling in each building found:

- In the After School Care 5 of the 8 samples (63%) had lead detected, with 2 samples above the criteria level of 0.11mg/m^2.
- In the Main Primary School building 9 of the 64 samples (14%) had lead detected, with 5 samples above the criteria level of 0.11mg/m^2.
- In the Primary School Detached Classrooms lead was not found in any of the 7 samples.
- In the Gambarri Centre 5 of the 10 samples (50%) had lead detected, with 4 samples above the criteria level of 0.11mg/m^2.
- In the Montessori Preschool 3 of the 5 samples (60%) had lead detected, with 2 samples above the criteria level of 0.11mg/m^2, however sampling in this area was limited due to the recent lead-disturbance activities.

While sample locations were selected to avoid areas where recent lead dust contamination is known to have occurred, it is possible that samples taken in the Montessori Preschool may not be representative of background contamination as they may have been affected by recent lead paint disturbance activities which have taken place in this building.

The laboratory report is attached at Appendix 2 and full surface concentration results are attached at Appendix 3. Figure 8 to Figure 19 below show photographs of the sample locations that exceeded the accepted project criteria.

Table 3: Blank corrected surface lead sampling results above the laboratory detection limit on July 24, 2020

Sample Number		Location	Concentration (mg/m^2)
H2032	Gambarri Centre – 014	Inside storage unit shelf (Figure 8)	0.222
H2037	Gambarri Centre – 002 – Staff Office	Behind monitor (Figure 9)	0.178

Sample Number		Location	Concentration (mg/m^2)
H2038	Gambarri Centre – 002 – Staff Office	Photocopier	0.025
H2039	Gambarri Centre – 002 – Staff Office	Behind microwave (Figure 10)	0.356
H2040	Gambarri Centre – 002 – Staff Office	Arms of chair (Figure 11)	0.211
H2041	After School Care – 002	Top of cupboard (Figure 12)	0.178
H2043	After School Care – 002	Piano cover	0.088
H2045	After School Care – 009	Side of bookcase (Figure 13)	0.578
H2047	After School Care – 005 – Store	Tennis racket shelf	0.089
H2048	After School Care – 005 – Store	Shelf behind bikes, parachute	0.044
H2049	Primary School – 054 – Canteen	Shelf above sink	0.089
H2055	Primary School – 052 – Hall side store (left of stage)	Top of piano (Figure 14)	0.489
H2057	Primary School – 049 – Corridor	Floor	0.089
H2059	Primary School – 056 – Art Room	Top of cupboard	1.422
H2061	Primary School – 058 – Studio	Bench top (Figure 15)	0.489
H2063	Primary School – 057 – Store	Top of shelves (Figure 16)	0.444
H2097	Primary School – 012	Soft chair under window	0.044
H2100	Primary School – 011	Top of corner cupboard (Figure 17)	0.667
H2105	Primary School – 006 – Cleaner's Room	Floor near mops	0.089
W2265	Montessori Preschool – Central Bathroom	Top of cupboard adjacent first aid	0.089
W2266	Montessori Preschool – Central Bathroom	Top of partition wall (Figure 18)	0.489
W2269	Montessori Preschool – 012 – Office	Bookshelf (animals/family/friends shelf) (Figure 19)	0.178

Figure 8: Sample H2032 inside storage unit shelf

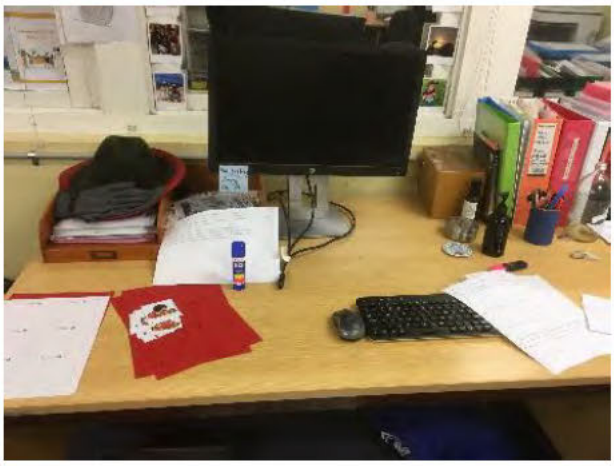


Figure 9: Sample H2037 behind monitor

Figure 10: Sample H2039 behind microwave

Figure 11: Sample H2040 arms of chair

Figure 12: Sample H2041 top of cupboard

Figure 13: Sample H2045 side of bookcase

Figure 14: Sample H2055 top of piano

Figure 15: Sample H2061 benchtop

Figure 16: Sample H2063 top of shelves

Figure 17: Sample H2100 top of corner cupboard

Figure 18: Sample W2266 top of partition

Figure 19: Sample W2269 bookshelf

7 Discussion

7.1 Contamination Assessment

The primary goal of the sampling undertaken at Yarralumla Primary School and Montessori Preschool, on July 24, 2020 was to determine the range of 'normal' background lead dust contamination in the main Primary School building, the detached Primary School building, the Gambarri Centre, the Montessori Preschool, and the After School Care building. This information can be used to inform an exposure risk assessment, and to set criteria levels for post-remediation clearance testing after cleaning after lead disturbance activities.

Previous surveying of this school found that lead paint was widespread throughout the school, and was in poor condition in some places, and it is therefore inevitable that they will be some contamination with lead dust throughout the school.

Due to the remediation work that had been undertaken on window frames that were painted with lead paint in the Montessori Preschool and Gambarri Centre areas, samples taken in these areas are not appropriate to use as an indication of background contamination due to the potential impact of lead remediation works in the areas causing elevated concentrations of lead on surfaces.

When these samples are excluded from analysis, results show that from the 79 sample locations in the Primary School buildings and After School Care building, 14 samples returned a result over the laboratory limit of detection (18%) and 7 samples returned a result that was above the project acceptance criteria of <0.11mg/m^2 (9%).

In general, the samples in the Primary School and After School Care that showed results above the acceptance criteria were areas which are unlikely to be regularly cleaned, and which are not expected to be 'high touch' surfaces, such as the tops of cupboards and shelves. Samples in these locations show 'worst case' lead dust levels.

While these results do not necessarily indicate widespread lead contamination at a high concentration throughout the entire school, results do indicate the potential for surfaces to become contaminated with lead dust over longer periods of time without cleaning and it is likely that other similar surfaces which were not sampled have similar contamination. Nevertheless, it does seem that most surface lead dust contamination has come from discrete events of lead paint disturbance with inadequate controls, rather than from widespread deterioration of painted surfaces.

It should also be noted that there were several areas throughout the school where paint on walls, windows, skirting boards and columns was observed to be in poor condition. While large flakes like this would generally not pose a significant risk without being directly ingested, there is the potential for larger flakes to get broken down and spread as a dust the longer paint remains in-situ. Given the significant quantity of lead paint remaining in the building as well as the particularly susceptible and vulnerable population, lead paint should be diligently managed in accordance with the Lead Paint Management Plan during normal use and when any maintenance or refurbishment works are conducted.

7.2 Exposure Risk Assessment

In addition to providing information of the extent of lead dust contamination throughout the school, these results can provide information for a general exposure risk assessment. Lead exposure in a school and preschool is of particular concern because of the vulnerable occupants (children).

While there is inherently an exposure risk from lead dust in these buildings, because of the presence of lead paint (particularly lead paint in poor condition), measured lead dust levels were not elevated in most locations in the main Primary School building and the detached Primary School building. Most samples from 'high touch' surfaces like desks, tables, (most) carpet and toys did not have detectable concentrations of lead. The exposure risk for lead in these buildings is not expected to be greatly elevated over the normal background exposure risk.

In the Gambarri Centre, the Montessori Preschool, and the After School Care buildings, measured dust levels were generally higher, and it is difficult to say if this is due to recent activities in these areas which have disturbed lead and contaminated surfaces, or because the normal background levels are higher. It was reported that the Staff Office in the Gambarri Centre was used by contractors during recent lead disturbance works, and that may be the reason results are elevated in this area.

If these results represent normal conditions in these buildings, it is possible that the exposure risk from lead in these buildings could be elevated over the normal background exposure risk. In particular the elevated results in the After School Care is of concern because, to the best of our knowledge, lead paint has not recently been disturbed in this building.

8 Conclusion and Recommendations

The results of investigation of surface lead dust contamination throughout Yarralumla Primary School and Montessori Preschool on 24 July 2020 found surface samples in 22 of the 94 sampled locations returned results above the laboratory limit of detection (23%) and 13 locations returned results above the accepted project criteria of 0.11 mg/m^2 (14%).

If locations in the Gambarri Centre and the Montessori Preschool which may have been contaminated by recent lead disturbance works are excluded from analysis, 14 of 79 sample locations in the Primary School and After School Care building returned a result over the laboratory limit of detection (18%) and 7 samples returned a result that was above the project acceptance criteria of <0.11mg/m^2 (9%).

In general, the samples in the Primary School and After-School Care that showed results above the acceptance criteria were areas which are unlikely to be regularly cleaned, and which are not expected to be 'high touch' surfaces. While these results do not necessarily indicate widespread lead contamination at a high concentration throughout the entire school, results do indicate the potential for surfaces to become significantly contaminated over longer periods of time without cleaning. Nevertheless, it does seem that most surface lead dust contamination has come from discrete events of lead paint disturbance with inadequate controls, rather than from widespread deterioration of painted surfaces.

The primary goal of the sampling was to determine the range of 'normal' background lead dust contamination in this school. These results show that while there is lead contamination throughout the school, most areas are below the project acceptance criteria, and 'below detection limit' results in post-remediation clearance testing should be achievable with good cleaning technique.

While there is inherently an exposure risk from lead dust in these building, because of the presence of lead paint (particularly lead paint in poor condition), measured lead dust levels were not elevated in most locations in the main Primary School and detached Primary School building. The exposure risk for lead in these buildings is not expected to be greatly elevated over the normal background exposure risk.

In the Gambarri Centre, the Montessori Preschool, and the After School Care buildings, measured dust levels were generally higher, and it is difficult to say if this is due to recent activities in these areas which have disturbed lead and contaminated surfaces, or because the normal background levels is higher. If these results represent normal conditions in these buildings, it is possible that the exposure risk for lead in these buildings could be somewhat elevated over the normal background exposure risk, particularly in the After School Care building because lead paint has not recently been disturbed in this building.

Given the significant quantity of lead paint remaining in the building as well as the vulnerable population of occupants, lead paint should be diligently managed in accordance with the Lead Paint Management Plan during normal use and when any maintenance or refurbishment works are conducted.

8.1 Recommendations

8. It was reported that the Staff Office in the Gambarri Centre was used by contractors during recent lead-disturbance works, and that may be the reason results are elevated in this area. Remediation cleaning following the method given in Robson report 11181_CleaningLeadMethod_YarralumlaPrimarySchool_20200724 should be undertaken of this area.
9. Remediation cleaning and clearance testing in areas affected by recent lead disturbance activities should be completed as per previous recommendations.
10. A ‘one-off’ general clean should be conducted throughout the entire school to reduce surface lead dust concentrations. It is recommended that HEPA vacuuming and wet wiping be undertaken.
11. Follow up testing in six months in the Gambarri Centre, the Montessori Preschool, and the After School Care buildings should be undertaken to determine if the high results seen in this assessment represent normal background levels in these buildings.
12. The frequency and scope of cleaning throughout this school should be increased to keep background lead dust levels to as low as reasonably practical.
13. It is recommended that the controls given in the Lead Paint Management Plan for Yarralumla Primary School [T01035_LPMP_Yarralumla_20191125] be reviewed and followed for all works which disturb lead paint, as disturbance of lead paint was identified to be the primary cause of high surface lead dust results.
14. Compliance with these controls should be made mandatory for all contractors engages to undertake any works which disturb lead paint.

9 Limitations

While Robson has taken all care to ensure that this report includes the most accurate information available, samples were taken at certain times on the day or days indicated within the report and Robson is unable to comment on conditions at other times. Any statement of expected conditions at other times should be taken as possible conditions only.

The report, including any risk assessment presented, is based on the information obtained by Robson at the time of sampling. Any variation in the environment, activities, methods, practices, products, or equipment used may change exposures to hazards, invalidating the presented risk assessment. Robson recommends that risks be re-assessed prior to making any changes to the aforementioned factors.

The findings contained within this report are developed from the interpretation of the results of specific sampling methods used in accordance with generally accepted practices and standards, based on the current state of knowledge. To the best of Robson's knowledge, our assessment of the data represents a reasonable interpretation of the general conditions, and subsequent risk at the time of sampling. Should you have any questions or require further information please contact Robson Environmental.

10 References

- National Institute for Occupational Safety and Health (NIOSH), 1996, NIOSH Method 9100: Lead in Surface Wipes, NIOSH Manual of Analytical Methods (NMAM), Fourth Edition, NIOSH, USA
- Standards Australia, 1998, AS4361.2–1998, Guide to lead paint management, Part 2: Residential and commercial buildings, Standards Australia, Australia
- Standards Australia, 2017, AS4361.2–2017, Guide to hazardous paint management, Part 2: Lead paint in residential and commercial buildings, Standards Australia, Australia
- U.S. Department of Housing and Urban Development 2012, Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing Second Edition, Office of Health Homes and Lead Hazard Control, Washington, DC.
- U.S. Department of Housing and Urban Development 2017, Revised Dust-Lead Action Levels for Risk Assessment and Clearance; Clearance of Porch Floors, Policy Guidance Number 2017-01, Office of Health Homes and Lead Hazard Control, Washington, DC.
- National Institute for Occupational Safety and Health (NIOSH), 2003, NIOSH Method 7301: Elements by ICP, NIOSH Manual of Analytical Methods (NMAM), Fourth Edition, NIOSH, USA

Appendix 1 Plans

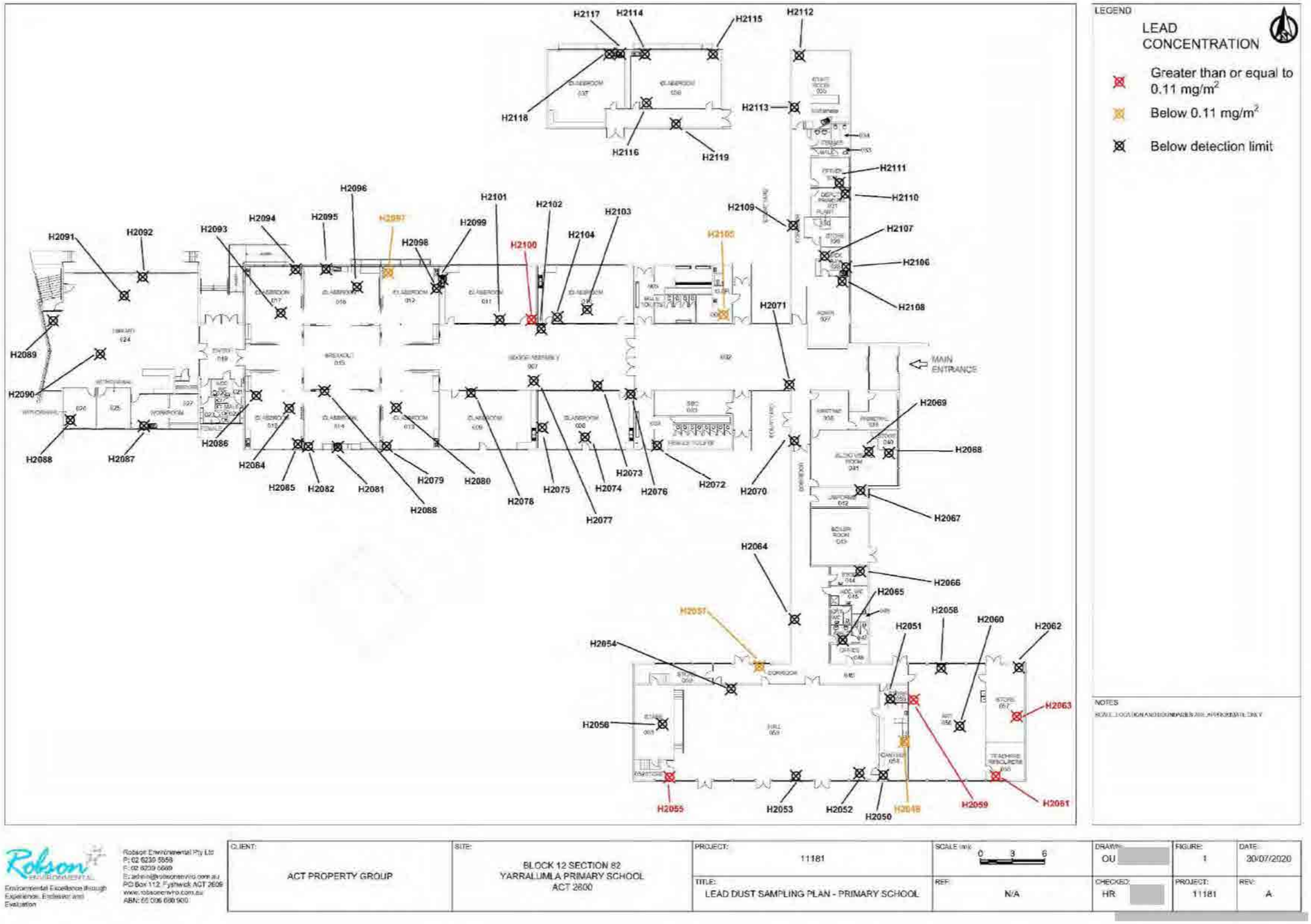
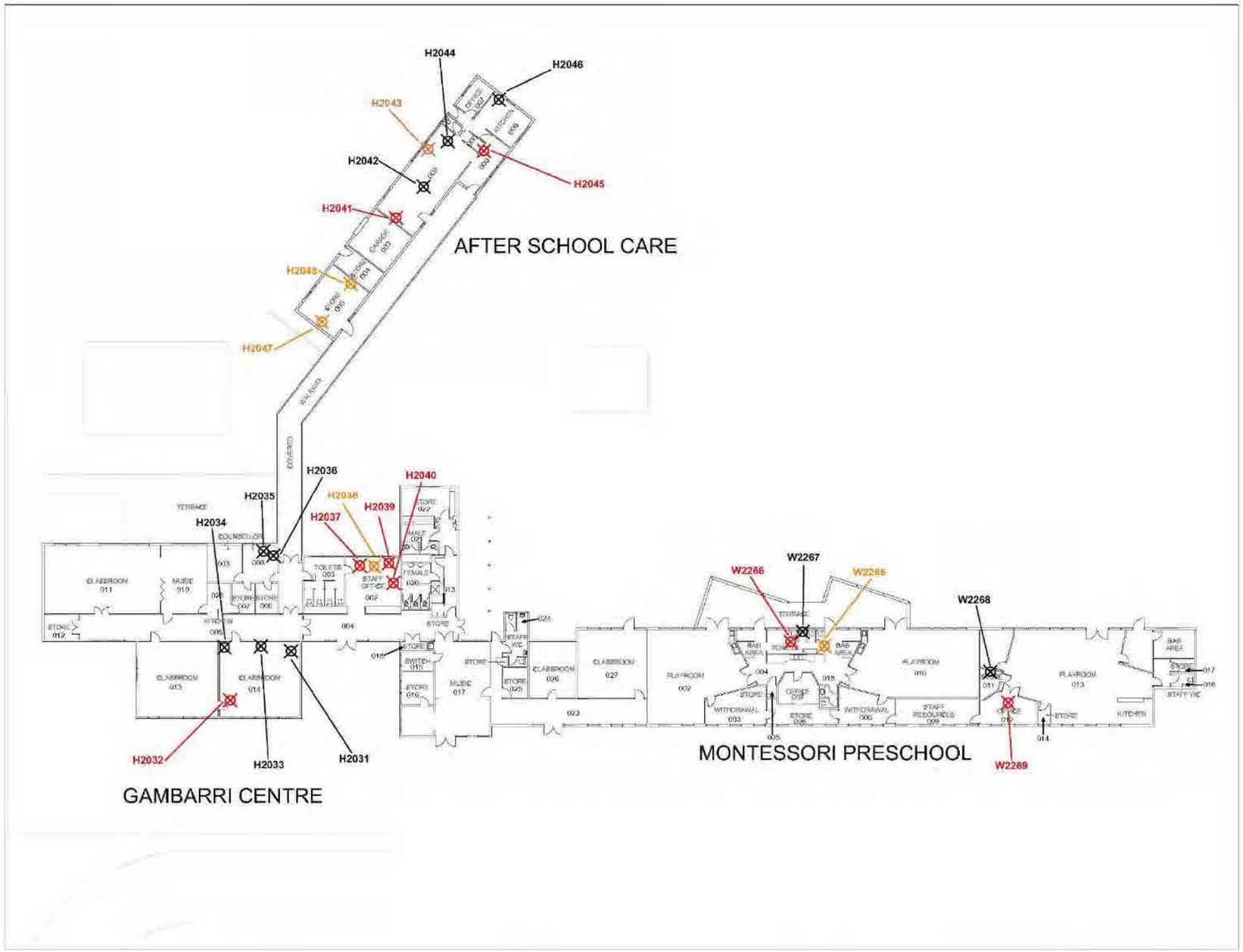


Figure 20: Sampling and Results Primary School – Yarralumla Primary School



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Environmental Excellence through Experience, Endeavor and Evaluation

CLIENT:	SITE:	PROJECT:	SCALE (m): 0 3 6	DRAWN: OU	FIGURE: 2	DATE: 31/07/2020
ACT PROPERTY GROUP	BLOCK 12 SECTION 82 YARRALUMLA PRIMARY SCHOOL ACT 2600	11181				
		TITLE: LEAD DUST SAMPLING PLAN - GAMBERI CENTRE, MONTESSORI PRESCHOOL & AFTER SCHOOL CARE	REF: N/A	CHECKED: HR	PROJECT: 11181	REV: A

Figure 21: Sampling and Results Gambarri Centre, Montessori Preschool and After School Care

Appendix 2 Results Certificate

[redacted]

Results Approved By

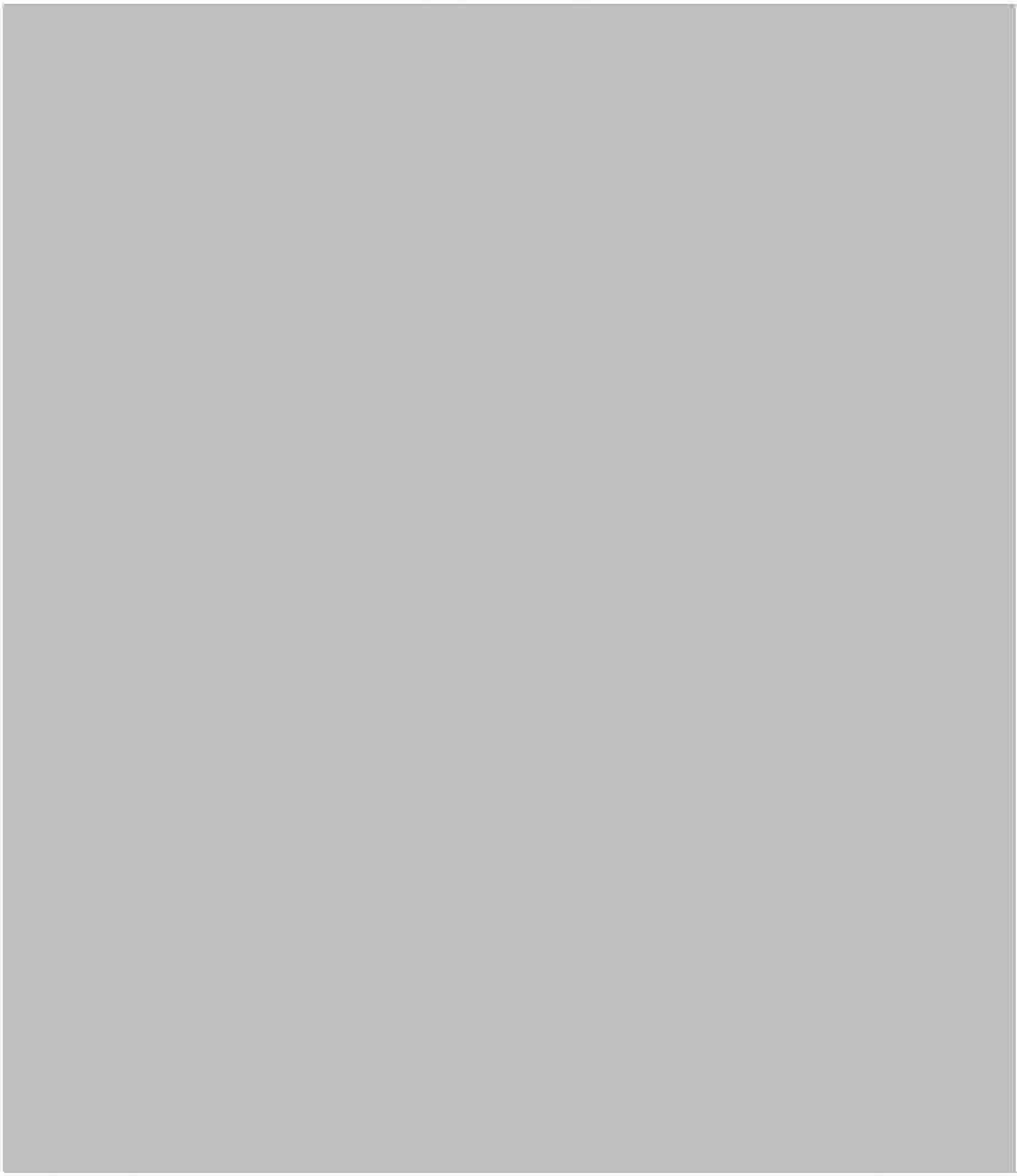
[redacted]

Authorised By

[redacted]

[redacted]

Client Reference: T01035



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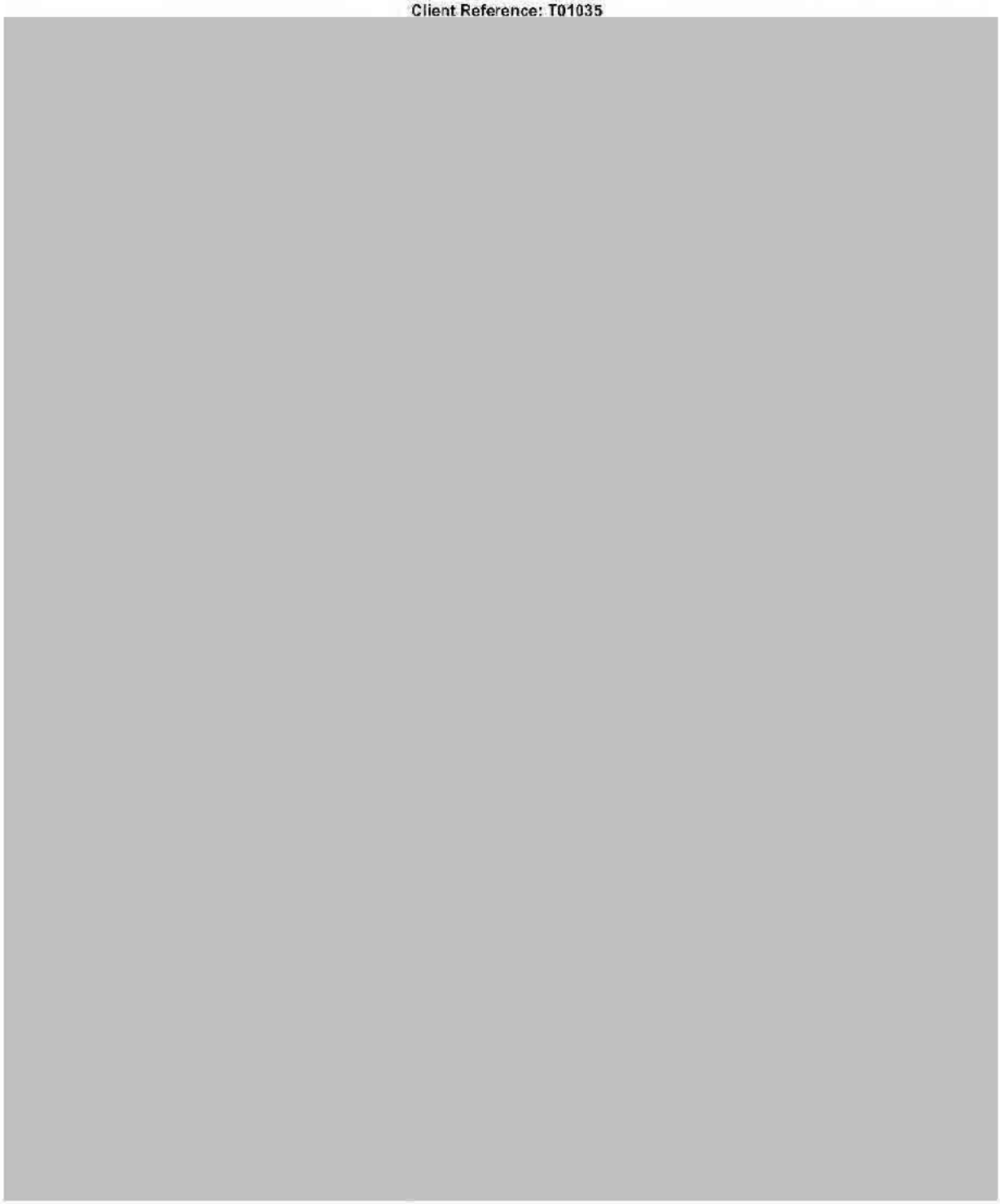

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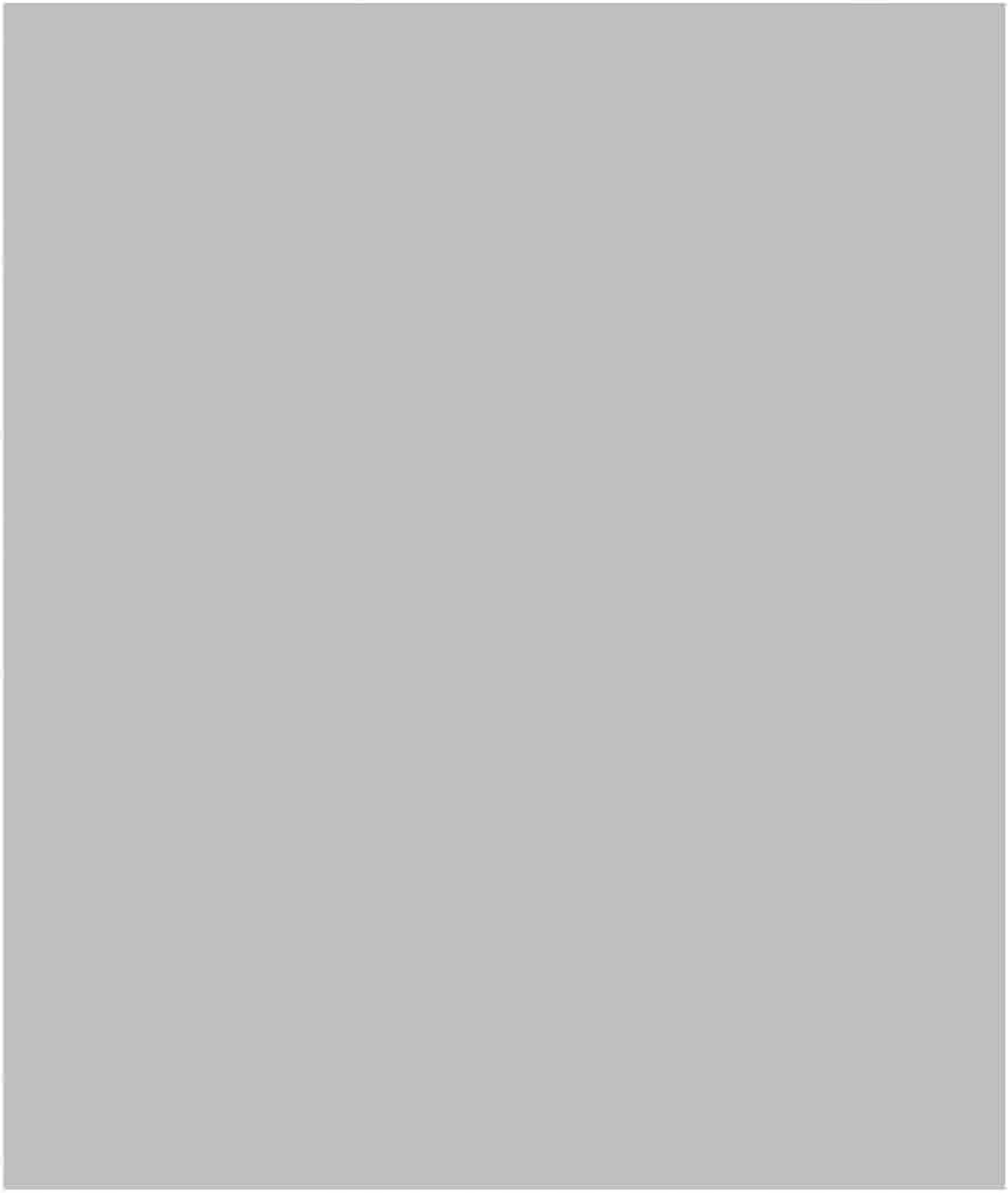

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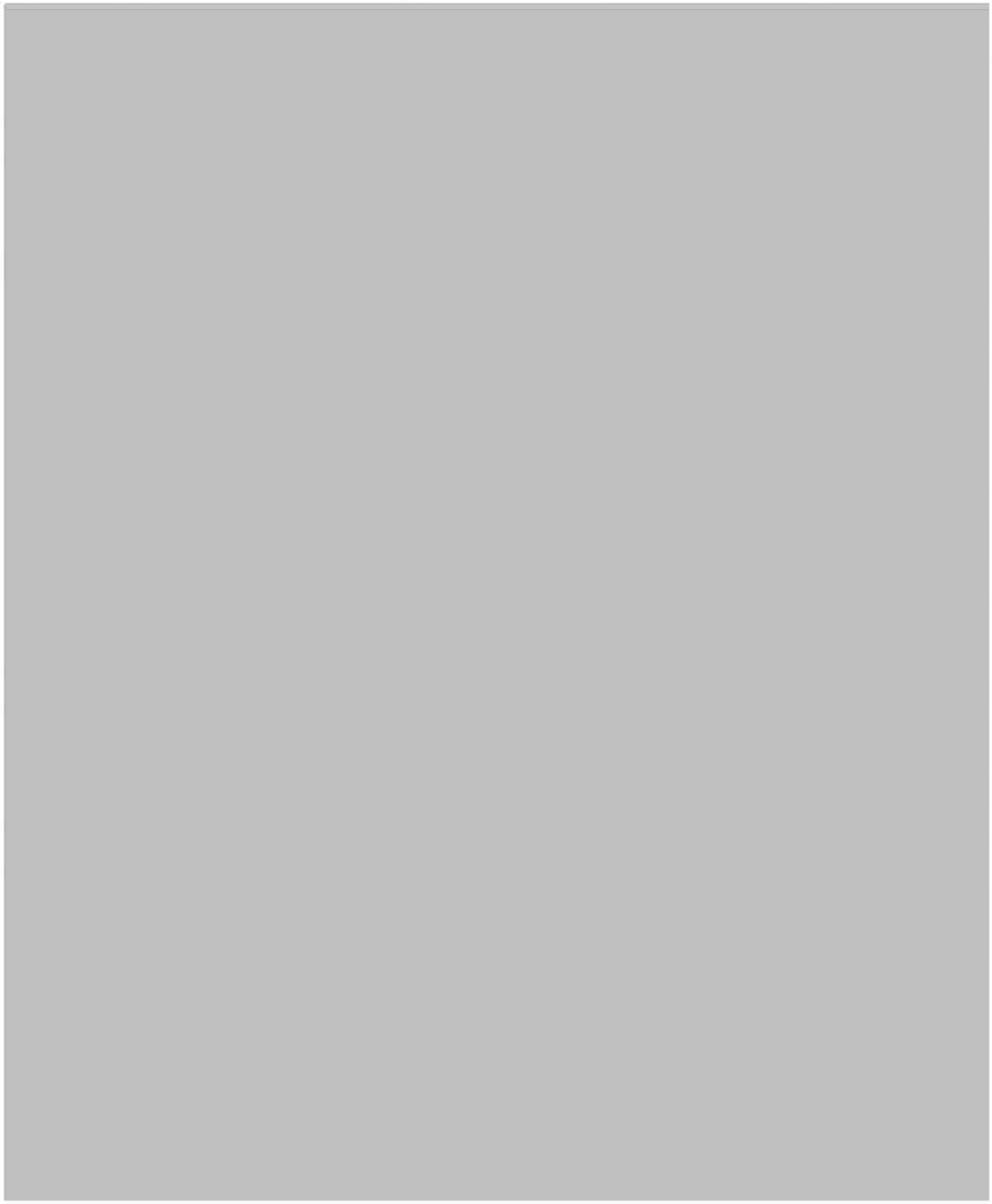

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Client Reference: T01035

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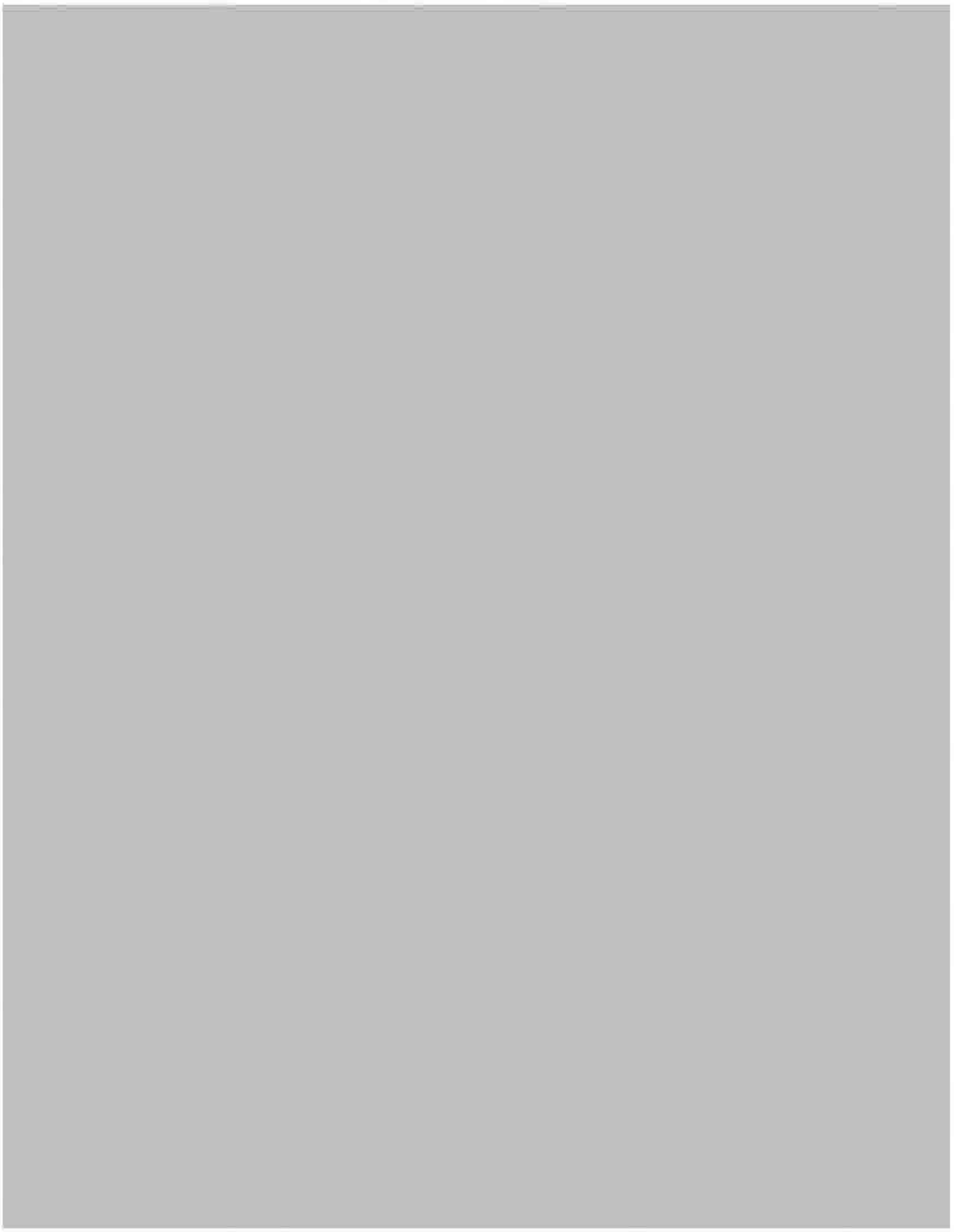
Client Reference: T01035



Appendix 3 Complete surface concentration results

Sample Number	Location	Surface	Concentration (mg/m^2)
H2031	Gambarri Centre – 014	Second shelf	<0.022
H2032	Gambarri Centre – 014	Inside storage unit shelf	0.222
H2033	Gambarri Centre – 014	Pinboard	<0.022
H2034	Gambarri Centre – 014	Top of corner cupboard	<0.022
H2035	Gambarri Centre – 008 – Counsellor's Office	Carpet next to piano	<0.022
H2036	Gambarri Centre – 008 – Counsellor's Office	Front of air con unit	<0.022
H2037	Gambarri Centre – 002 – Staff Office	Behind monitor	0.178
H2038	Gambarri Centre – 002 – Staff Office	Photocopier	0.025
H2039	Gambarri Centre – 002 – Staff Office	Behind microwave	0.356
H2040	Gambarri Centre – 002 – Staff Office	Arms of chair	0.211
H2041	After School Care – 002	Top of cupboard	0.178
H2042	After School Care – 002	Rug	<0.022
H2043	After School Care – 002	Piano cover	0.088
H2044	After School Care – 002	Table	<0.022
H2045	After School Care – 009	Side of bookcase	0.578
H2046	After School Care – 006 – Kitchen	Fridge handle	<0.014
H2047	After School Care – 005 – Store	Tennis racket shelf	0.089
H2048	After School Care – 005 – Store	Shelf behind bikes, parachute	0.044
H2049	Primary School – 054 – Canteen	Shelf above sink	0.089
H2050	Primary School – 054 – Canteen	Top of fridge	<0.022
H2051	Primary School – 055 – Canteen Pantry	Floor	<0.022
H2052	Primary School – 053 – Hall	Top of chair	<0.022
H2053	Primary School – 053 – Hall	Floor near window	<0.022
H2054	Primary School – 053 – Hall	Floor next to skirting board	<0.022
H2055	Primary School – 052 – Hall side store (left of stage)	Top of piano	0.489
H2056	Primary School – 051 – Hall	Stage floor	<0.022
H2057	Primary School – 049 – Corridor	Floor	0.089
H2058	Primary School – 056 – Art Room	Bench	<0.022
H2059	Primary School – 056 – Art Room	Top of cupboard	1.422
H2060	Primary School – 056 – Art Room	Green carpet square	<0.022
H2061	Primary School – 058 – Studio	Bench top	0.489

Sample Number	Location	Surface	Concentration (mg/m^2)
H2062	Primary School – 057 – Store	Top of beanbag under window	<0.022
H2063	Primary School – 057 – Store	Top of shelves	0.444
H2064	Primary School – 049 – Corridor	Carpet under window	<0.022
H2065	Primary School – 047 – Bathroom	Floor	<0.022
H2066	Primary School – 044 – Storeroom	Shelf	<0.022
H2067	Primary School – 042 – Uniform Shop	Shelf	<0.022
H2068	Primary School – 041	Top of PC Locs storage unit	<0.022
H2069	Primary School – 041	Carpet under pillar	<0.022
H2070	Primary School – 049 – Corridor	Floor	<0.022
H2071	Primary School – 002- Atrium	Carpet	<0.022
H2072	Primary School – 004 – Bathroom	Floor	<0.022
H2073	Primary School – 007	Top of desk	<0.022
H2074	Primary School – 008	Carpet near door	<0.022
H2075	Primary School – 008	Fabric chair	<0.022
H2076	Primary School – 008	Top of cupboard	<0.022
H2077	Primary School – 007	Rug – fish #7	<0.022
H2078	Primary School – 009	Pinboard - red	<0.022
H2079	Primary School – 013	Top of bookcase	<0.022
H2080	Primary School – 013	Top of desk	<0.022
H2081	Primary School – 014	Hand washing bench	<0.022
H2082	Primary School – 014	Carpet in corner under window	<0.022
H2083	Primary School – 015	Carpet next to sliding door	<0.022
H2084	Primary School – 018	Child's desk	<0.022
H2085	Primary School – 018	Plush toy	<0.022
H2086	Primary School – 01	Desk behind monitor	<0.022
H2087	Primary School – 027 – Kitchen	Bench	<0.022
H2088	Primary School – 028	Rug (Australian animal)	<0.022
H2089	Primary School – 026	desk near corner window	<0.022
H2090	Primary School – 024 – Library	top of bookcase	<0.022
H2091	Primary School – 024 – Library	desk	<0.022
H2092	Primary School – 024	Shelf	<0.022
H2093	Primary School – 017	Child's desk	<0.022
H2094	Primary School – 017	Toy theatre booth under window	<0.022

Sample Number	Location	Surface	Concentration (mg/m^2)
H2095	Primary School – 016	Handwashing basin	<0.022
H2096	Primary School – 016	Rug (duck picture)	<0.022
H2097	Primary School – 012	Soft chair under window	0.044
H2098	Primary School – 012	Top of shelf	<0.022
H2099	Primary School – 011	Top of built in cupboard	<0.022
H2100	Primary School – 011	Top of corner cupboard	0.667
H2101	Primary School – 011	Carpet	<0.022
H2102	Primary School – 007	Carpet near door frame	<0.022
H2103	Primary School – 010	Child's table	<0.022
H2104	Primary School – 010	Carpet	<0.022
H2105	Primary School – 006 – Cleaner's Room	Floor near mops	0.089
H2106	Primary School – 028 – Sick Bay	Floor corner	<0.022
H2107	Primary School – 028 – Sick Bay	Chair	<0.022
H2108	Primary School – 027	Top of binder under window	<0.022
H2109	Primary School – Corridor	Carpet under window	<0.022
H2110	Primary School – 031 – Deputy Principal	Behind monitor	<0.022
H2111	Primary School – 032 – Executive Teacher	Behind monitor	<0.022
H2112	Primary School – 035 – Staff Room	Soft chair under window	<0.022
H2113	Primary School – Detached Classrooms – 035	Desk under window	<0.022
H2114	Primary School – Detached Classrooms – 036	Storage unit adjacent window	<0.022
H2115	Primary School – Detached Classrooms – 036	Carpet in corner behind T.V.	<0.022
H2116	Primary School – Detached Classrooms – 036	Desk under internal window	<0.022
H2117	Primary School – Detached Classrooms – 037	Shelf adjacent window	<0.022
H2118	Primary School – Detached Classrooms – 037	Couch under window	<0.022
H2119	Primary School – Detached Classrooms – Corridor	Carpet	<0.022
W2265	Montessori Preschool – Central Bathroom	Top of cupboard adjacent first aid	0.089
W2266	Montessori Preschool – Central Bathroom	Top of partition wall	0.489
W2267	Montessori Preschool – Central Bathroom	Toilet cistern	<0.022
W2268	Montessori Preschool – 011 – Store	Gem rocks shelf	<0.022
W2269	Montessori Preschool – 012 – Office	Bookshelf (animals/family/ friends)	0.178

Lead Paint Survey

Yarralumla Primary School and Preschool

September 2019

Certificate of approval for issue of documents

Document Name	T01035 Yarralumla Primary School and Preschool Lead Paint Survey Report		
Report Issue Date	15/10/2019	**Job Number**	T01035
Client	ACT Property Group		

Surveying and Report Preparation	Reviewed	Approved
Robson Environmental Pty. Ltd.	Robson Environmental Pty. Ltd.	Robson Environmental Pty. Ltd.

Table of Contents

1 Introduction

Robson Environmental Pty Ltd conducted surveys of painted surfaces at Yarralumla Primary School and Preschool in Yarralumla on behalf of ACT Property Group on 23 April, 22 July and 27 August 2019 and a reinspection on 16 September 2019, after paint stabilisation was undertaken.

1.1 Objective

The purpose of these assessments was to determine the location, condition and potential risk of lead paint within the Yarralumla Primary School and Preschool in Yarralumla, and to provide recommendations on appropriate management actions for identified lead paint.

1.2 Scope

Assessments on 23 April, 22 July, 27 August and 16 September 2019 consisted of:

1. Visual inspection of painted surfaces in the following locations at Yarralumla Primary School and Preschool to identify potential lead paint:
    a. Yarralumla Primary school main building:
        i. Internal window frames, door frames and skirting boards, internal radiator heating pipes.
        ii. The internal cleaners'/Bathroom masonry walls, doors and riser walls and pipes.
        iii. The internal masonry walls and brick walls throughout the main building.
        iv. The Canteen pantry and the walls, skirting board windows in the Canteen, Hall and Quad.
        v. The exterior windows and infill panels, down pipes and fascia, timber eave soffits, and window frames and doors throughout the building
    b. Yarralumla Gambarri Preschool building:
        i. Exterior window frames, doors and eave soffits.
        ii. Internal roof support beams and both internal and exterior window frames, pergola frame, and doors.
    c. Yarralumla Primary School After School Care building:
        i. Exterior window frames and eave soffits.
2. Sample collection and analysis for lead content of any paints suspected of containing lead; and
3. Preparation of a report summarising the findings of the survey and providing recommendations on appropriate management actions for any identified lead paint, as required.

2 Background

Lead paint is defined by Australian Standard AS4361.2:2017 *Guide to hazardous paint management Part 2: Lead paint in residential, public and commercial buildings* as a paint or component coat of a paint system containing lead or lead compounds, in which the lead content (calculated as lead metal) is in excess of 0.1% by weight. Paints manufactured since 1997 contain 0.1% lead by mass or less. This concentration has been determined as the value which, if exceeded, might render the paint hazardous to humans.

According to AS4361.2:2017, lead-based paint may present a risk to health if it is ingested or inhaled. There is minimal risk where lead paint is in a sound condition, but paint does present a health risk if it exhibits chalking or flaking, or if it is subject to abrasion (e.g. on sash windows). Dust created from deteriorating lead paint is a recognised source of lead exposure in residential, public and commercial buildings. The peeling and flaking of lead paint may also cause dangerous residues of lead to build up in accumulated dust.

3 Methods

3.1 Visual Inspection and Sample Location Selection

An assessment of the likelihood of paint containing lead presenting a risk from exposure is made based on factors such as age, appearance, location and condition, and sample locations are selected based on this assessment.

Factors which increase the likelihood of paint containing lead include:

- If the building was built before 1997 (and particularly if it was built before 1970);
- If paint is likely to be industrial, marine or other specialised paint, regardless of age;
- Painted areas historically painted with white, pastel or mid-strength colour topcoats such as structural timbers, weatherboards, window, doorframes, on fences and railings;
- Surfaces with cement-rendering;
- Surface which could have 'Pink Primer' (a mixture of red and white lead pigments), commonly used in undercoats applied to interior and exterior timbers and as a priming coat to trowelled plaster walls, to cement-rendered surfaces and as a top coat on external weather boards;
- Surfaces which could have red-lead primer, which was commonly used on timber window sills and exposed timber; and
- Imported metal roofing paints used until the 1980s.

Factors which increase the likelihood (and therefore risk) of exposure to lead in paint include:

- If the paint is on friction or impact surfaces such as window sashes and door jambs;
- If the paint is in areas which are likely to be knocked or chipped such as architraves, skirting boards, balustrades, stair treads and window frames;
- If the paint is on surfaces accessible to children;
- If the paint is on surfaces around food and water sources or preparation areas; or
- If the paint is in poor condition (cracked, flaking, chalking, peeling or bubbling).

The number of samples required depends of the size of the building and the number of different types and colours of paint present. Each different type of paint must be sampled individually to test for the presence of lead, and if there is doubt about whether paints are the same type, multiple samples are collected.

Paint suspected to contain lead can be qualitatively tested using 3M™ LeadCheck™ Swabs, as a screening tool. LeadCheck swabs are USA EPA-recognised for the determination of lead-based paint with a 600ppm lower detection limit, which is equivalent to 0.06% lead by weight.

3.2 Identification of Lead in Paint

Samples of paint suspected of containing lead were collected from the site following the method given in Appendix A of AS/NZS 4361.2:2017. Sample locations are given in Table 4 in Section 4.

Samples were sealed and transported to [redacted] under Chain of Custody (COC) documentation for analysis. The samples were analysed for lead content by [redacted] using in-house method [redacted]

3.3 Risk Assessment Method

Section 2 of AS/NZS4361.2:2017 states that:

> If lead is present in paint that is still in sound condition, and is not a friction or impact surface, it is not likely to present a health hazard unless disturbed. However, if the paint is in poor condition, e.g. flaking, peeling or badly chalking, it may be a risk to those touching it, or through disturbance from rain or high winds.

Flaking of old lead paint is common even where a number of coats of more recent lead-free paints have been applied. The risk presented by identified lead paint was determined using assessment criteria adapted from AS/NZS4361.1:2017 *Guide to hazardous paint management, Part 1: Lead and other hazardous metallic pigments in industrial applications*, based on assessment of the condition of the paint, as per Table 1 and the likelihood of exposure occurring, as per Table 2 to give a risk rating as per Table 3. This risk assessment is a rating of the risk of exposure to lead in paint occurring. It is not within scope of this assessment to determine the risk from exposure to lead in paint.

Table 1: Paint Condition Rating

Condition Rating	Characteristics
Poor	• Paint that is cracking, flaking, chalking, peeling or bubbling (including over-painting layer). • Areas with high levels of dust which appears to be from painted surfaces.
Sound	• Paint is not cracking, flaking, chalking, peeling or bubbling. • Surface are free of dust.

Table 2: Likelihood of Exposure Rating

Example surfaces or areas	Non-stabilised Paint	Stabilised Paint (e.g. over-painted or encapsulated)
Any areas accessed by children	Very Likely	Likely or Possible
Surfaces that are friction or impact surfaces e.g. door frames, window sashes	Very Likely	Likely or Possible
Surfaces that are touched frequently, e.g. work benches, furniture, handles	Very Likely	Possible
Food preparation areas or around water supplies for human or animal consumption	Very Likely	Possible
Surfaces that can be easily touched e.g. internal walls, readily accessible external walls	Likely	Possible
Surfaces that are not readily or easily touched, e.g. eaves, ceilings	Possible	Unlikely

Example surfaces or areas	Non-stabilised Paint	Stabilised Paint (e.g. over-painted or encapsulated)
Areas with no access or very infrequent access, e.g. boiler rooms, subfloor spaces	Unlikely	Very Unlikely

Table 3: Lead Paint Risk Matrix

Paint Condition	Likelihood of Exposure				
	Very Likely	Likely	Possible	Unlikely	Very Unlikely
Poor	High	High	High	Medium	Medium
Sound	High	High	Medium	Low	Low

4 Results

Based on the visual inspection of painted surfaces on the Site against the criteria given in Section 3.1 the locations shown in Table 4 were suspected of having lead paint, and has samples collected for analysis of lead paint content. The paint on all other surfaces in the assessed locations are not thought to contain lead, based on the findings from the 3M™ LeadCheck™ Swabs, however quantitative testing was not carried out.

Table 4 details the details of each location of suspected lead paint, and the results of sample analysis for samples collected on 23 April, 22 July and 27 August 2019. Photos of each suspected surface are shown in Appendix 1 and the results from the laboratory analysis are attached in Appendix 2.

The reinspection survey of Yarralumla Primary School and Preschool in Yarralumla undertaken on 16 September 2019 determined that the over-painting of the lead paint undertaken in July 2019 had not been successful in stabilising the lead paint. Visual assessment of the paint determined that the stabilised paint had deteriorated and that the lead paint continues to present a risk. Photos of the current condition of the stabilised paint are shown in Appendix 1.

Table 4: Results of lead paint testing and risk assessment

Sample ID	Sample Location	Photo Reference	Paint Colour	Paint Condition	Lead Conc. (%w/w)	Lead Paint?	Exposure Likelihood	Risk Rating as at 16/09/19	Known Management History
Pb01	Yarralumla Primary School Main Building – Internal window frames, door frames and skirting boards throughout	Appendix 1 Figure 1	White	Poor Non-stabilised	0.29	Yes	Very Likely	High	
Pb02	Yarralumla Primary School Main Building – Internal radiator heating pipes throughout	Appendix 1 Figure 2	White	Sound	0.090	No	N/A		
Pb03	Yarralumla Primary School Main Building – Internal Cleaners'/Bathroom masonry walls	Appendix 1 Figure 3 Figure 4	Grey	Sound Stabilised	0.19	Yes	Possible	Medium	Lead paint has been stabilised via over painting 11/08/19.
Pb04	Yarralumla Primary School Main Building – Internal Cleaners'/Bathroom doors	Appendix 1 Figure 5	Dark Blue	Sound Non-stabilised	0.82	Yes	Likely	High	
Pb05	Yarralumla Primary School Main Building – Internal Cleaners'/Bathroom riser walls and pipes	Appendix 1 Figure 6	Green	Poor Non-Stabilised	0.26	Yes	Unlikely	Low	
Pb06	Yarralumla Primary School Main Building – Internal brick walls throughout	Appendix 1 Figure 7	White	Sound	<0.005	No	N/A		
Pb07	Yarralumla Primary School Main Building –Internal masonry walls throughout	Appendix 1 Figure 8	Yellow	Sound	<0.005	No	N/A		
Pb08	Yarralumla Primary School Main Building – Exterior windows and infill panels	Appendix 1 Figure 9	Green	Poor Non-stabilised	0.32	Yes	Very Likely	High	Some areas have been stabilised by over-painting on 18/07/19. Over-painted surfaces have deteriorated as of 16/09/2019.

Sample ID	Sample Location	Photo Reference	Paint Colour	Paint Condition	Lead Conc. (%w/w)	Lead Paint?	Exposure Likelihood	Risk Rating as at 16/09/19	Known Management History
Pb09	Yarralumla Primary School Main Building – Exterior down pipes and fascias	Appendix 1 Figure 10	Grey	Sound	0.1	No	N/A		
Pb10	Yarralumla Primary School Main Building – Exterior timber eave soffits	Appendix 1 Figure 11	Grey	Sound	<0.005	No	N/A		
Pb11	Yarralumla Primary School Main Building – External window frames and doors	Appendix 1 Figure 12	Grey	Sound	0.05	No	N/A		
Pb12	Yarralumla Gambarri and Preschool – Exterior window frames, doors, masonry walls and eave soffits	Appendix 1 Figure 13 Figure 14	White	Poor Non-stabilised	0.13	Yes	Very Likely	High	Stabilisation by over-painting on 13/07/19. Over-painted surfaces have deteriorated as of 16/09/2019.
Pb13	Yarralumla Primary School After School Care – Exterior window frames and eave soffits	Appendix 1 Figure 15 Figure 16	White	Poor Non-stabilised	0.28	Yes	Possible	High	Stabilisation by over-painting on 17/07/19. Over-painted surfaces have deteriorated as of 16/09/2019.
Pb14	Yarralumla Preschool – Internal roof support beam	Appendix 1 Figure 17	Yellow	Sound	<0.005	No	N/A		
Pb15	Yarralumla Preschool – Internal and external window frames, pergola frame and doors	Appendix 1 Figure 18	Grey	Sound	<0.005	No	N/A		
C2560	Yarralumla Primary School Canteen – Pantry bench top	Appendix 1 Figure 19 Figure 20	White	Poor Non-stabilised	0.22	Yes	Very Likely	High	
T010351	Yarralumla Canteen and Hall – Wall between serving windows	Appendix 1 Figure 21	White	Poor Non-stabilised	0.18	Yes	Very Likely	High	

Sample ID	Sample Location	Photo Reference	Paint Colour	Paint Condition	Lead Conc. (%w/w)	Lead Paint?	Exposure Likelihood	Risk Rating as at 16/09/19	Known Management History
T010352	Yarralumla Canteen and Hall – Skirting board south (window side) Hall	Appendix 1 Figure 22	White	Poor Non-stabilised	0.15	Yes	Very Likely	High	
T010353	Yarralumla Canteen and Hall – Skirting board North (internal side) Hall	Appendix 1 Figure 23	White	Poor Non-stabilised	0.092*	Probable	See note below. This paint should be managed the same as the paint from sample T010352 as it likely to contain a similar amount of lead, on average.		
T010354	Yarralumla Canteen and Hall – Between windows in Quad outside Hall	Appendix 1 Figure 24	Green	Poor Non-stabilised	0.15	Yes	Very Likely	High	
T010355	Yarralumla Canteen and Hall – Skirting under windows in Quad outside Hall	Appendix 1 Figure 25	Green	Poor Non-stabilised	0.44	Yes	Very Likely	High	

*This paint is probably the same as the paint in sample T010352, given its location and similarity to the paint on the opposite side of the Hall. The variation in lead concentration could be due to different thickness of paint application or from overpainting in some areas, and it is likely that there is variation in concentration of lead in the paint on skirting boards throughout the Hall. It is recommended that all paint on skirting board in the Hall be managed as lead paint.

5 Summary and Recommendations

The survey of painted surfaces undertaken at Yarralumla Primary School and Preschool in Yarralumla on 23 April 2019 identified multiple areas where paint contained a concentration of lead exceeding 0.1% by weight threshold, which classifies the paint on these surfaces as lead paint under AS4361.2:2017.

A reinspection survey of Yarralumla Primary School and Preschool in Yarralumla was undertaken on 16 September 2019 to determine if the over-painting of the lead paint undertaken in July 2019 had been successful in stabilising the lead paint. Visual assessment of the paint determined that the stabilised paint had deteriorated and that the lead paint continues to present a risk.

The locations with lead paint in poor condition are shown in the plans in Appendix 3. Risk assessment of potential exposure to the paint based on the condition of the paint and the likelihood of exposure occurring found several locations presented a high risk of exposure, one paint presented a medium risk of exposure and one paint presented a low risk of exposure.

5.1 Recommendations

AS/NZS4361.2 requires that 'if a house or building contains lead paint, the paint need to be managed to prevent it becoming a health hazard. Depending on the circumstances, the options for management of lead paint usually include:

1. Doing nothing;
2. Stabilizing the paint;
3. Carrying out abatement; or
4. A combination of these options.'

It is recommended that a Lead Paint Management Plan be developed for Yarralumla Primary School and Preschool. The Lead Paint Management Plan should include:

1. A record of the location, condition and potential risk of lead paint within the site;
2. A record of management actions taken to reduce the risk of the lead paint present on site;
3. Details of management options for lead paint;
4. Appropriate method for management; and
5. Lead Paint Condition Checklist.

Considering the continued poor condition of several areas of lead paint despite the attempted stabilisation with over painting, and the risk presented by the location of the paint and its vicinity to children, it is recommended that abatement work is carried out on the lead paint as per Table 5.

Table 5: Recommendations for management of identified lead paint

Location	Sample ID	Risk Rating	Recommendations	Priority
Yarralumla Primary School Main Building – Internal window frames, door frames and skirting boards throughout	Pb01	High	• Abate paint following methods detailed in AS/NZS4361.2	High

Location	Sample ID	Risk Rating	Recommendations	Priority
Yarralumla Primary School Main Building – Internal Cleaners'/Bathroom masonry walls	Pb03	Medium	• Maintain the lead paint in good condition. • Check periodically to ensure a low exposure risk (i.e. no cracking, flaking, chalking or peeling observed). • Review and update the risk rating appropriately.	Low
Yarralumla Primary School Main Building – Internal Cleaners'/Bathroom doors	Pb04	High	• Abate paint following methods detailed in AS/NZS4361.2	Medium
Yarralumla Primary School Main Building – Internal Cleaners'/Bathroom riser walls and pipes	Pb05	Medium	• Maintain the lead paint in good condition. • Check periodically to ensure a low exposure risk (i.e. no cracking, flaking, chalking or peeling observed). • Review and update the risk rating appropriately.	Low
Yarralumla Primary School Main Building – Exterior windows and infill panels	Pb08	High	• Abate paint following methods detailed in AS/NZS4361.2	High
Yarralumla Gambarri and Preschool – Exterior window frames, doors, and masonry walls	Pb12	High	• Further investigation to delineate separate paints • Abate paint following methods detailed in AS/NZS4361.2	High
Yarralumla Gambarri and Preschool – Eave soffits			• Further investigation to delineate separate paints • Abate or stabilise paint on eave soffits following methods detailed in AS/NZS4361.2	Medium
Yarralumla Primary School After School Care – Exterior window frames	Pb13	High	• Further investigation to delineate separate paints • Abate paint on window frames following methods detailed in AS/NZS4361.2	High
Yarralumla Primary School After School Care – Eave soffits		High	• Further investigation to delineate separate paints • Abate or stabilise paint on eave soffits following methods detailed in AS/NZS4361.2	Medium
Yarralumla Primary School Canteen – Pantry bench top	C2560	High	• Abate paint following methods detailed in AS/NZS4361.2	High

Location	Sample ID	Risk Rating	Recommendations	Priority
Yarralumla Canteen and Hall – Wall between serving windows	T010351	High	• Abate paint following methods detailed in AS/NZS4361.2	High
Yarralumla Canteen and Hall – Skirting board south (window side) Hall	T010352	High	• Abate paint following methods detailed in AS/NZS4361.2	High
Yarralumla Canteen and Hall – Skirting board North (internal side) Hall	T010353	High	• Abate paint following methods detailed in AS/NZS4361.2	High
Yarralumla Canteen and Hall – Between windows in Quad outside Hall	T010354	High	• Abate paint following methods detailed in AS/NZS4361.2	High
Yarralumla Canteen and Hall – Skirting under windows in Quad outside Hall	T010355	High	• Abate paint following methods detailed in AS/NZS4361.2	High

6 Limitations

While Robson Environmental has taken all care to ensure that this report includes the most accurate information available, the report and any risk assessment presented is based on the information obtained by Robson Environmental at the time of assessment. Any variation in environment, activities, methods, practices, products, or equipment used may change exposures to hazards, invalidating the presented risk assessment. Robson recommends that risks be re-assessed prior to making any changes to the aforementioned factors.

The findings contained within this report are developed from the interpretation of the results of specific sampling methods used in accordance with generally accepted practices and standards, based on the current state of knowledge. To the best of Robson Environmental's knowledge, our assessment of the data represents a reasonable interpretation of the general conditions, and subsequent risk at the time of sampling. Should you have any questions or require further information please contact Robson Environmental.

7 References

- Standards Australia, 2017, *Guide to hazardous paint management, Part 1: Lead and other hazardous metallic pigments in industrial applications*, AS/NZS4361.1, Standards Australia, Australia.
- Standards Australia, 2017, *Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings*, AS/NZS4361.2, Standards Australia, Australia.

Appendix 1 Photographs

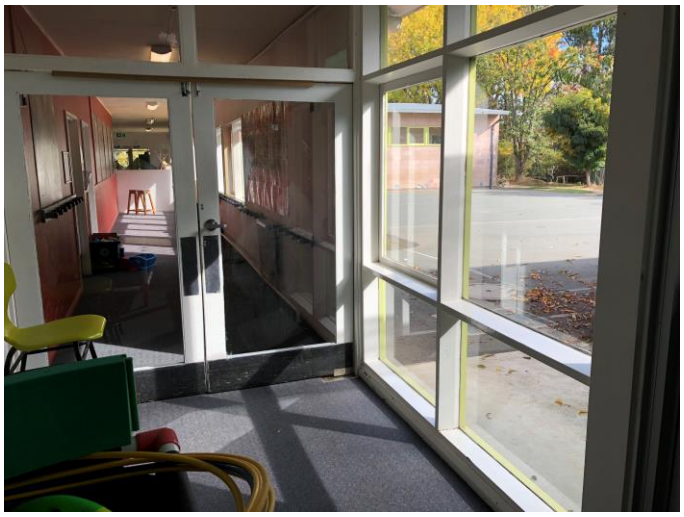


Figure 1: Pb01 23/04/2019

Figure 2: Pb02 23/04/2019

Figure 3: Pb03 Before Stabilisation 23/04/2019

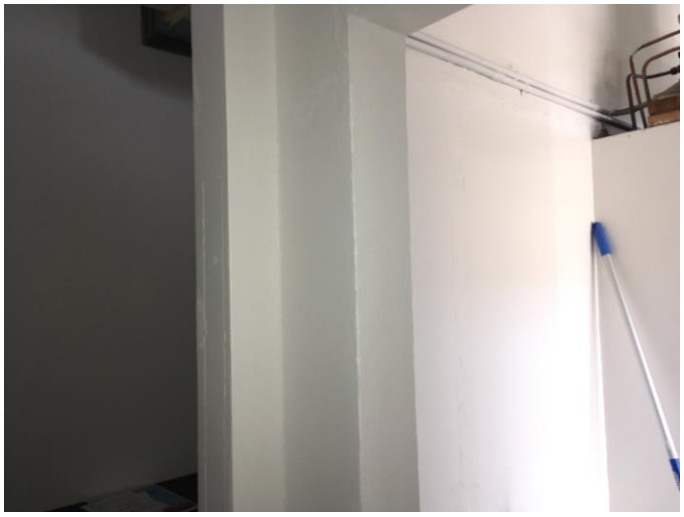


Figure 4: Pb03 After Stabilisation 16/09/2019

Figure 5: Pb04 16/09/2019

Figure 6: Pb05 23/04/2019

Figure 7: Pb06 23/04/2019

Figure 8: Pb07 23/04/2019

Figure 9: Pb08 23/04/2019

Figure 10: Pb09 23/04/2019

Figure 11: Pb10 23/04/2019

Figure 12: Pb11 16/09/2019

Figure 13: Pb12 Before Stabilisation 23/04/2019

Figure 14: Pb12 After Stabilisation 04/08/2019

Figure 15: Pb13 Before Stabilisation 23/04/2019

Figure 16: Pb13 After Stabilisation 16/09/2019

Figure 17: Pb14 23/04/2019

Figure 18: Pb15 23/04/2019

Figure 19: C2560 22/07/2019

Figure 20: C2560 22/07/2019

Figure 21: T010351 27/08/2019

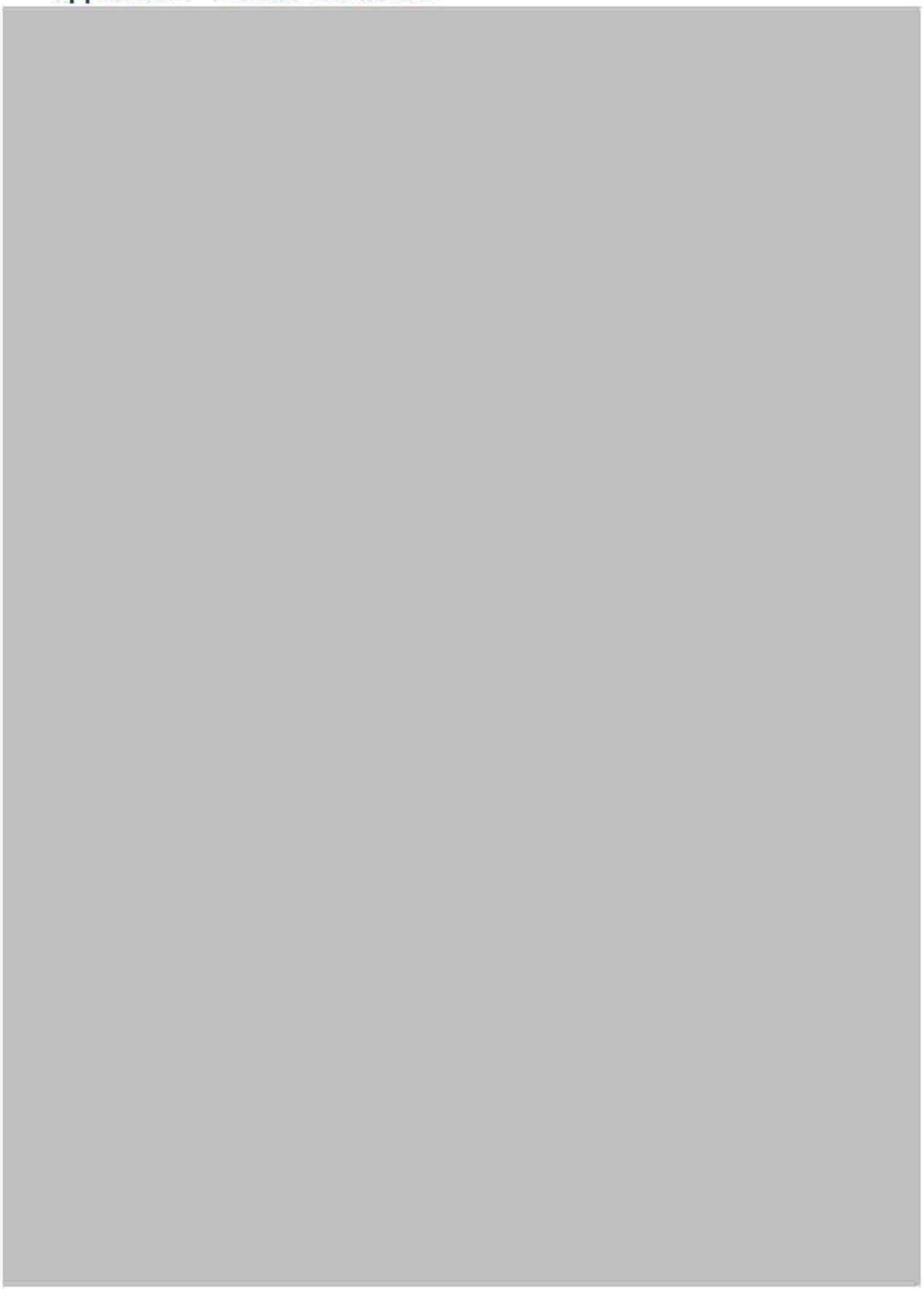
Figure 22: T010352 27/08/2019

Figure 23: T010353 27/08/2019

Figure 24: T010354 27/8/2019

Figure 25: T010355 27/08/2019

Appendix 2 Results Certificate



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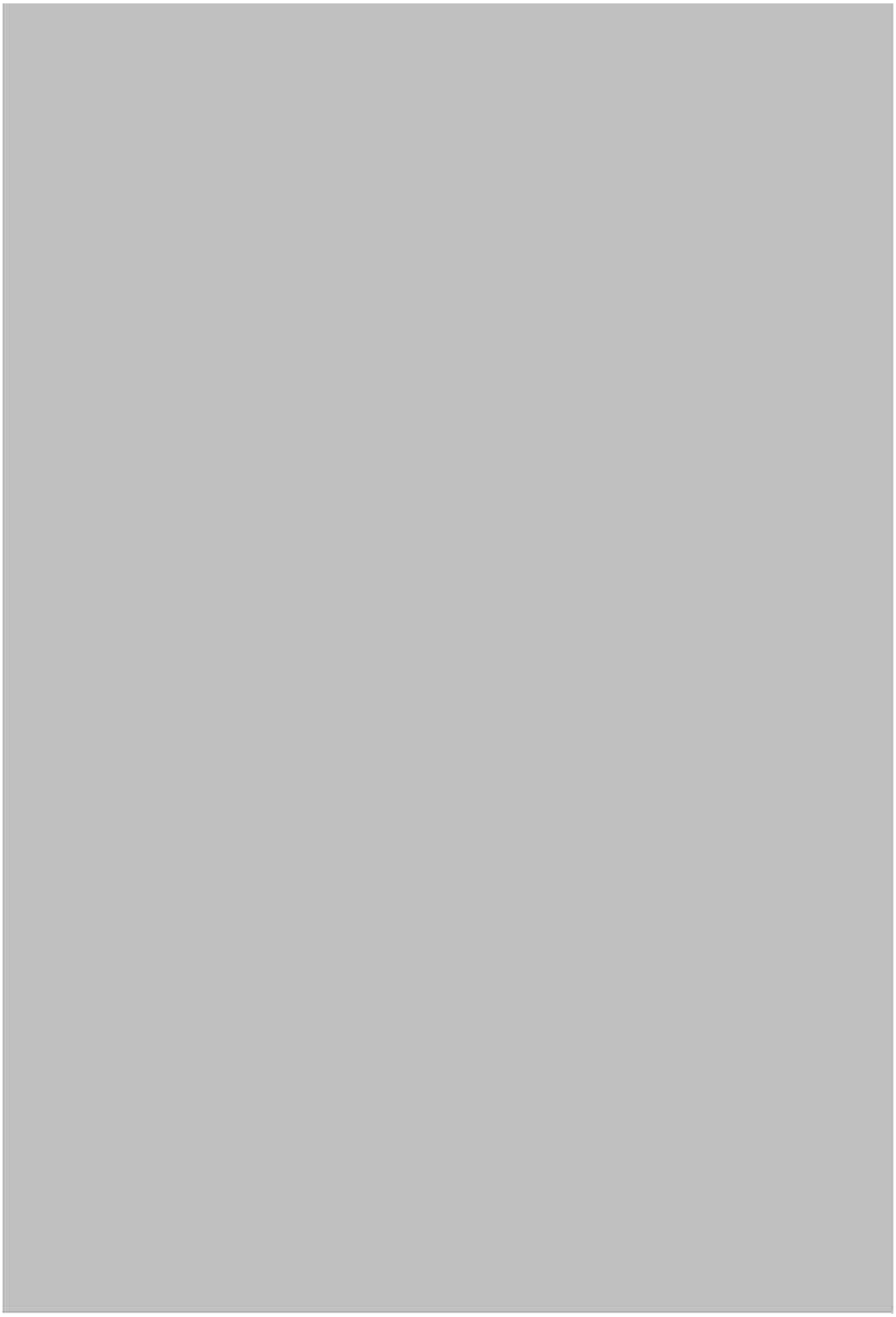

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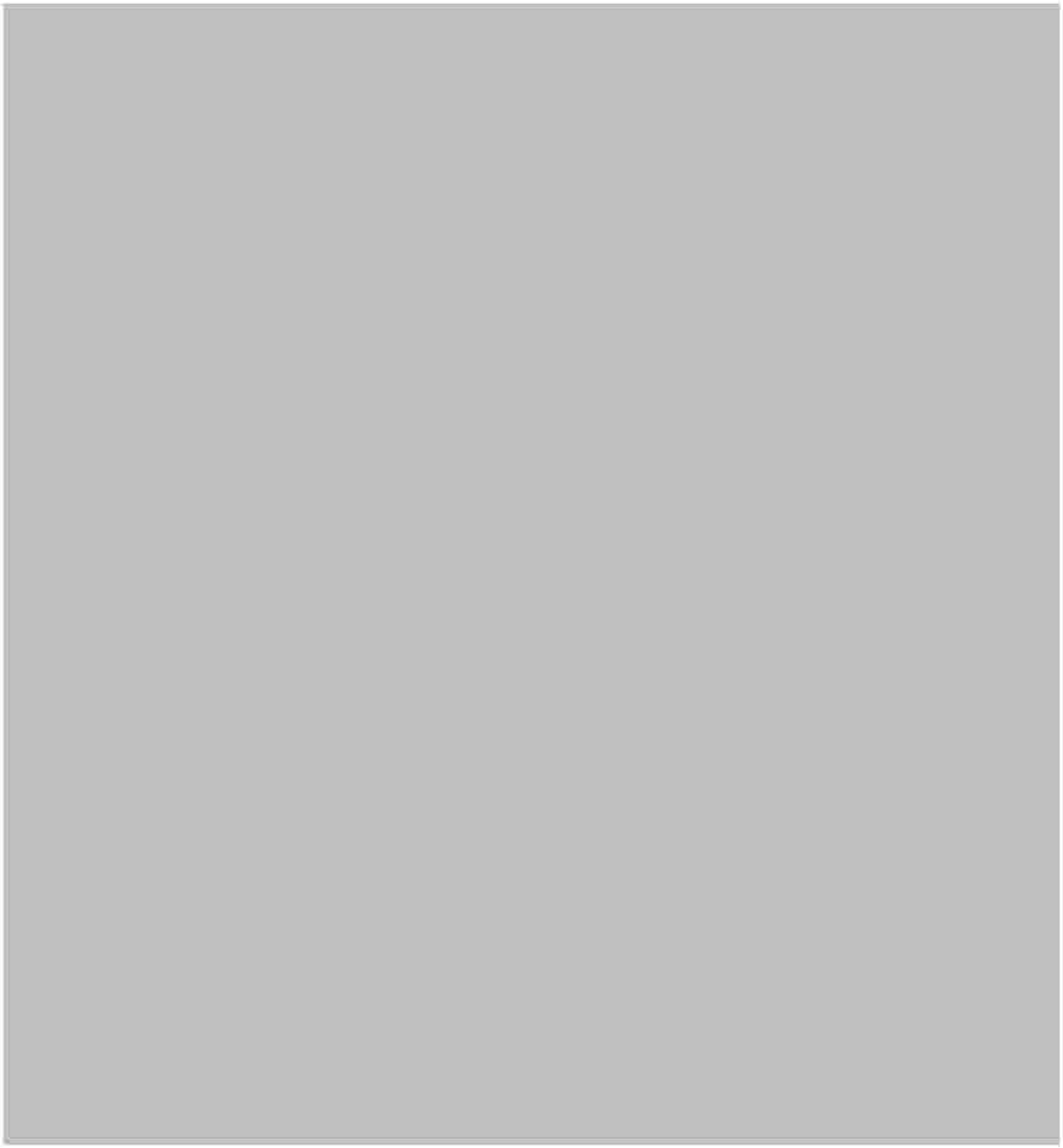

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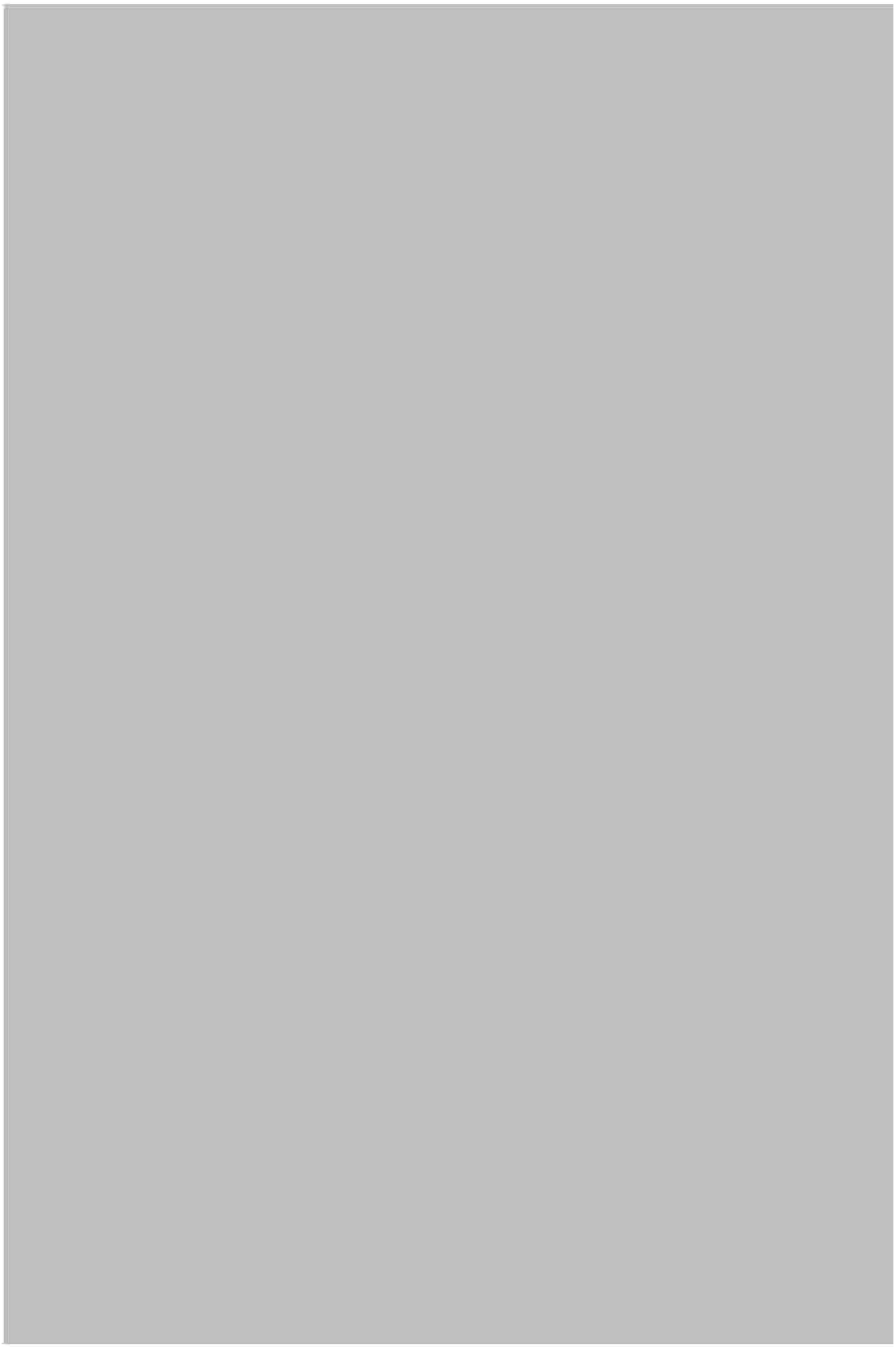

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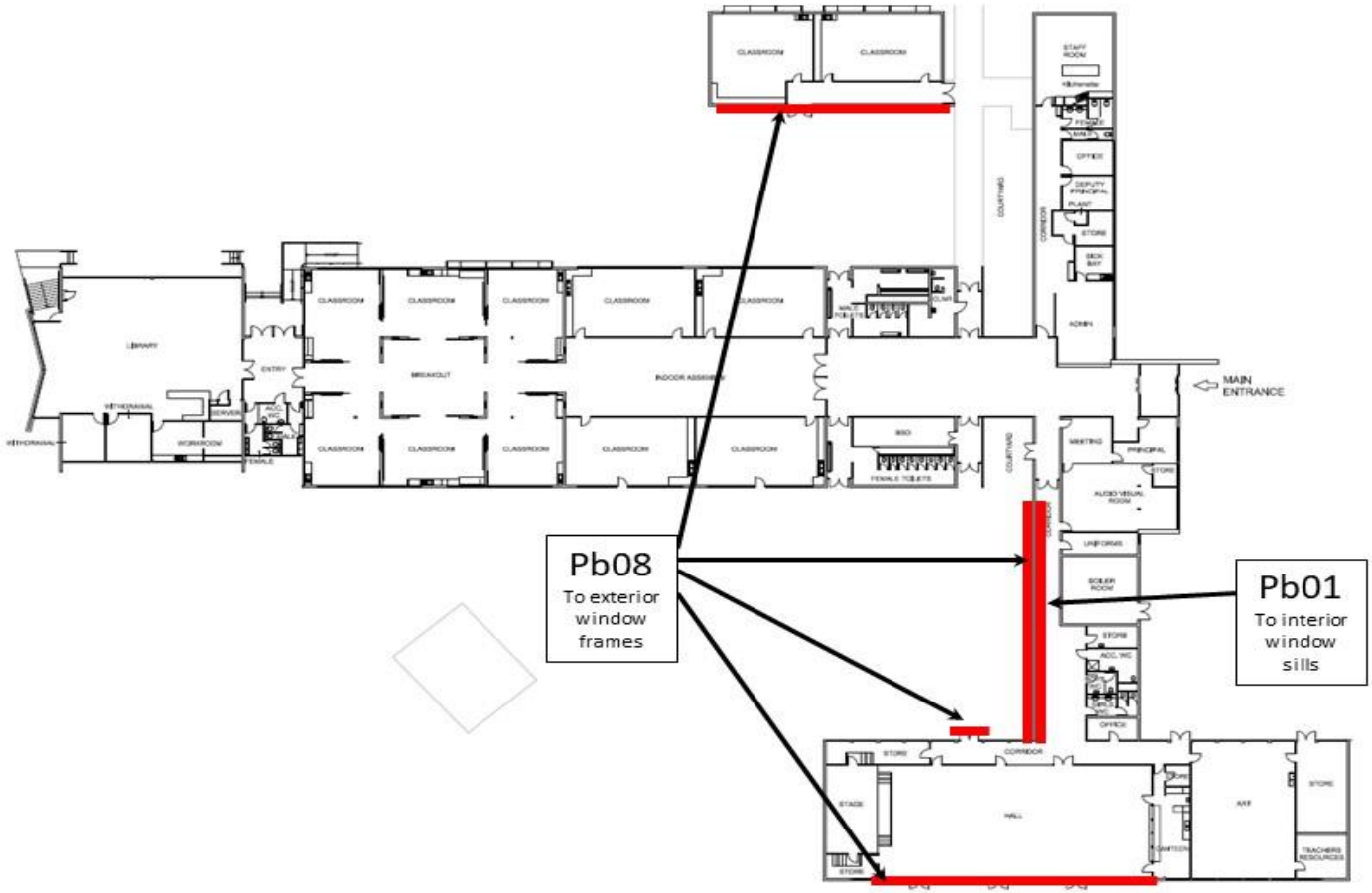
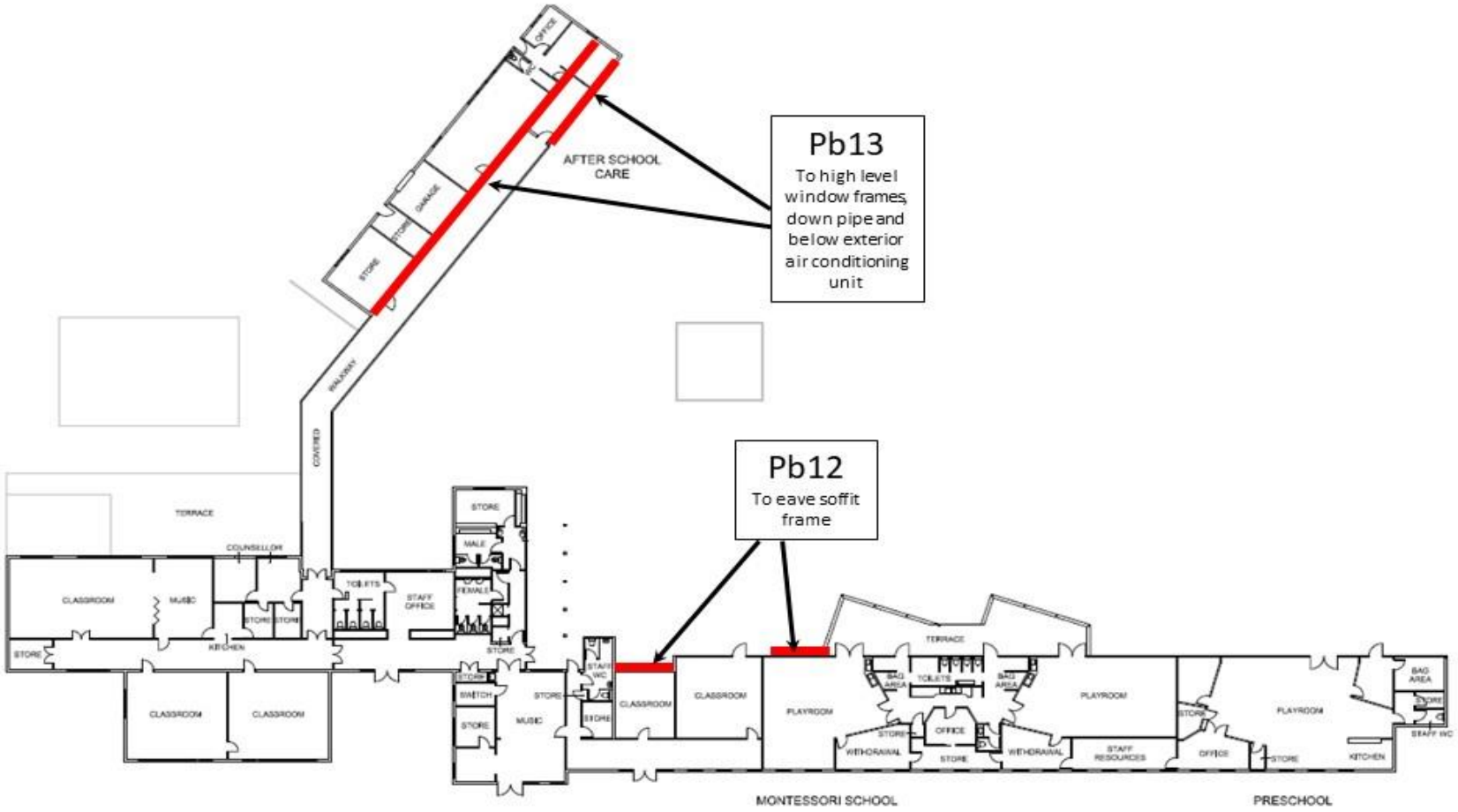
Client Reference: T01035, Yarralumla

Appendix 3 Plans




Pb13
To high level window frames, down pipe and below exterior air conditioning unit
Pb12
To eave soffit frame
AFTER SCHOOL CARE
MONTESSORI SCHOOL
PRESCHOOL