

Microbial Testing - Willyama High School

Radium Street, Broken Hill, NSW 2880



School Infrastructure NSW Regional Office - North Western NSW

Report No.: 30158-R04

March 2024

www.enviroscience.com.au







Microbial Testing

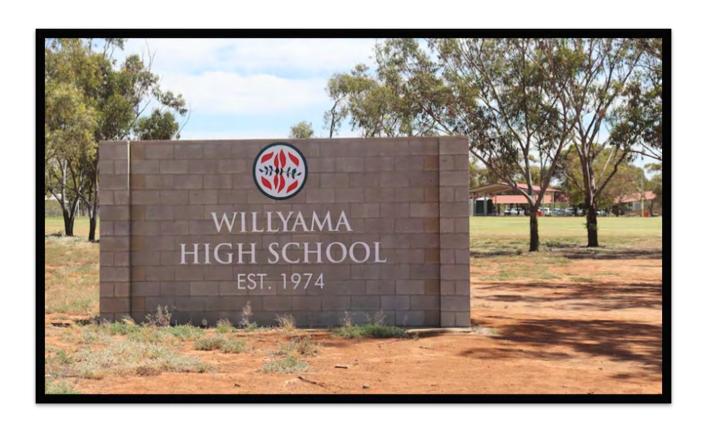
WILLYAMA HIGH SCHOOL,

RADIUM STREET, BROKEN HILL, NSW 2880

School Infrastructure NSW Regional Office - North Western NSW

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Accredited Systems













Executive Summary

EnviroScience Solutions Pty Ltd was engaged by NSW Department of Education to examine Willyama High School, Broken Hill which was observed to have a significant mould infestation. This event was discovered by a staff member attempting to reopen the school after the holiday break. Multiple onsite inspections occurred to visually access the extent, type, cause and remediation considerations.

Most fungal spores are commonly found in the environment. Aspergillus species, especially A. Fumigatis and some Penicillium species are known to be medical pathogens. These species are soil saprophytes but are easily dispersed via air streams due to the small size of their spores. Up to 70% of individuals are estimated to have some level of allergy to mould spores, causing headaches and coughing, however, serious health effects are uncommon (Edmonson et al, 2009).

If an individual is immunocompromised due to ChemoRx, organ transplant, HIV (affected T-cell mediated immunity) frail aged, etc, then an opportunistic mould infection can result. This can often be fatal. (National Guidelines for the Prevention of Nosocomial Invasive Aspergillosis During Construction/Renovation Activities, 2002).

The findings suggests the three (3) Storey Campus Building - Northern, Western and Eastern areas consisting of mainly classrooms, staffrooms and the library exhibited extensive visible mould, on floors, walls, ceilings, furniture, books, documents, Heating Ventilation and Air Conditioning (HVAC) system(s), electronics, and clothing, throughout the entire building, apart from the Administrative Southern section. The visual inspection and samples obtained for laboratory analysis indicate extensive, active mould growth and therefore potential elevated levels of fungal spores within the affected rooms, and is subsequently classified as a Condition, 3 (Ref IICRC-520:2015).

The definitions for the classification of Condition 1 is normal fungal ecology and no visible mould, Condition 2 is settled spores or fungal filaments, and Condition 3 is actual fungal growth.





The swabs and Bio-tape impressions show spores and active growth of the environmental moulds Cladosporium, Alternaria, and Mucor spp. However, there is evidence that Aspergillus and Penicillium spp, which are recognised human pathogens are also present in several locations tested, and invariably more widespread throughout.

EnviroScience Solutions was unable to determine the exact cause of the microbial growth. However, multiple contributing factors include:

- 1. Moisture created from within the building could have occurred from the carpets being cleaned and the air conditioning system was operational during the shutdown period. The above incident coupled with consideration to original design of the building and lack of natural ventilation, due to windows not being able to be opened, condensation, natural lighting, poor insulation and possibly the HVAC retrofit of the original mechanical evaporative air conditioning system which was supplemented with additional wall units.
- 2. Water ingress from outside from large box guttering and large storm events not coping with existing design with evidence of structural faults such as leaching to brickwork. Additionally there was a significant rain event in January where Broken Hill received four (4) times its mean rainfall in January over six (6) days, coupled with elevated high humidity this could have been a contributing factor.
- 3. Building general hygiene overcrowding and inadequate storage facilities, not allowing for general routine cleaning and allowing organic debris to accumulate and thereby provide a potential growing medium.





Unless these potential issues are permanently fixed and resolved, even after remediation works the re occurrence of mould growth is likely.

It is recommended that a detailed scope of works be prepared. This will include destructive testing and inspection to determine if additional water/moisture problems are identified within wall and ceiling cavities, these works will need to be undertaken under controlled conditions.

Consideration of designing a hybrid model instead of the sole reliance on mechanical HVAC should be deliberated. Increasing the amount of natural ventilation into the building should improve general indoor air quality by reducing the buildup of pollutants, odours, humidity, energy consumption and reduced noise from compressor and fans. From a sustainability perspective socially, it provides the indoor occupants a connection between indoor and outdoor spaces with increased natural light and views. In an educational setting this would be likely to improve focus, concentration spans and naturally academic performance. A hybrid HVAC style model also builds resilience and provides contingency during energy or system failures.

Additionally other hazards, namely asbestos and lead (pB) paint will need to be identified and incorporated into the scope of works. Of note some asbestos products and lead (pB) paint surfaces will not be able to be remediated and will need to be removed due to their porous/hazardous nature and that they may be damaged during the physical abrasiveness of remediation works.

When considering and designing the scope of works the building envelope will need to be segregated into separate areas for the purpose of remediation; Structural, HVAC and Contents. The porosity of materials needs to be considered. Materials that easily absorb or adsorb moisture and, if organic, that can easily support fungal growth, will need to be discarded, as they cannot be effectively remediated under the *IICRC-520:2015 Condition 3 guidelines*.





Porous materials generally cannot be successfully remediated under the *IICRC-520:2015 Condition 3 guidelines* this would apply to the current vermiculite sprayed ceiling fire retardant, carpets, paper products, furnishings, HVAC insulation in ductwork, plasterboard, ceiling tiles, insulation, particle/chipboard, fibre cement sheet, medium density fibreboard and electronics, need to be identified and considered from an economic and sustainability perspective when considering the scope of works for remediation.

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Remediation





GLOSSARY

Abbreviation	Description		
agar	A gelatinous product made from seaweed used as a base for bacterial cultures		
AIOH	Australian Institute of Occupational Hygiene		
ASHRAE	American Society of Heating Refrigerating and Air-Conditioning Engineers		
Bulk Sample	Sample obtained for laboratory analysis, by scraping a hard surface or removal of a piece of product, or vacuuming carpet or porous materials such as carpets or textiles		
CFU	Colony forming unit – any part of a fungus that can start growing when it is on nutrient agar media.		
CFU/cm ²	Colony forming units per square centimetre		
CFU/m ³	Colony forming units per cubic metre		
Contamination	Considered detrimental to human health and/or the environment		
Fungi	Any microorganisms belonging to the Kingdom Fungi including mould and Yeast sp. Fungi are commonly referred to as mould (mold in the USA), though mould only refers to mycelial growing fungi.		
Genera	Part of the taxonomic description of a group of fungi and the most common form of identification. Well known examples include Penicillium, Aspergillus, Cladosporium.		
НЕРА	High Efficiency Particulate Filtration that has a 99% efficiency of particles larger than 0.3 microns (0.3 μ g).		
HVAC	Heating ventilation and air conditioning		
Hygienist	Individual certified by the AIOH		
Hyphae	A part of filamentous growing fungi that can elongate and find new moisture and nutrients and to transport them over distance. Often described as a root like structure in appearance, but not in function.		
IAQ	Indoor Air Quality		
IICRC	Institute of Inspection Cleaning and Remediation Certification		





Abbreviation	Description	
Mould	Common description of visible fungal colonies with mycelial growth form.	
Mycotoxin	A secondary metabolite produced by fungi as a normal part of respiration.	
PM ₁₀	Particulate matter 10 microns or smaller	
PM _{2.5}	Particulate matter 2.5 microns or smaller	
PPE	Personal protective equipment	
ppm	Parts per million	
RH	Relative Humidity	
SOW	Scope of Works	
Spp	Several species belonging to that genus.	
Spec A	Spec. A single fungal species was differentiated but not identified.	
Species	The specific taxonomic description of a fungus	
Spore	A general term referring to all fungal reproductive structures	
Substrate	Basis for the nutrients for the fungal growth	
Surface Swab	Sterile cotton swab moistened in sterile water which is rubbed on surfaces to pick up fungal spores	
Taxa	Systematic categorisation of genera and species	
TSP	Total suspended particulates	
VOC	Volatile Organic Compound	
Yeast	Fungi that produce distinct cells and that reproduce by budding or dividing cells	





1 INTRODUCTION

EnviroScience Solutions Pty Ltd (ES) was engaged by Mr Joseph Warman, of NSW Department of Education (DET) Level 2, 188 Macquarie Street, Dubbo, NSW 2830 to examine multiple rooms at Willyama High School, Broken Hill which were found to have a visible and significant mould infestation which was observed by a staff member upon reopening the school after the holiday break.

Multiple site inspections over January and February were undertaken to;

- Assess the level of mould damage and health risks, including safe egress and required personal protective equipment to safely access the campus to undertake the assessments.
- Visual inspections and oratory documentation in an attempt to find the cause of the mould damage.
- Define a preliminary high-level scope of works for the remediation of said mould.

This report presents the results of the samples of Air, Swab and Bio-tape impression taken, based on the laboratory analysis by EnviroScience.





2 Background

Spores formed by fungal moulds are small, usually single-celled reproductive bodies which are highly resistant to desiccation and heat and are capable of growing into a new organism without uniting with another organism — i.e. asexual reproduction. There are varied environmental conditions, such as temperature, aridity, etc, for differing species of mould which govern spore development and dispersal.

The most common mode of dispersion of spores is, due to their buoyancy, by air circulation both indoors and outside. As a result, they are the most abundant micro-organisms in the air.

Moulds are in the main saprophytic and as such colonise dead organic matter as a source of nutrients. As they do not produce chlorophyll, they do not require a source of light for growth. Some have low moisture requirements and therefore can survive and flourish in a variety of environments. Thus, there are few indoor environments that will not support at least some mould growth and a number that are likely to be densely colonised (such as damp basements).

Most fungal spores are commonly found in the environment. Aspergillus species, especially A. Fumigatis and some Penicillium species are known to be medical pathogens. These species are soil saprophytes but are easily dispersed via air streams due to the small size of their spores.

Up to 70% of individuals are estimated to have some level of allergy to mould spores, causing headaches and coughing, however, serious health effects are uncommon (Edmonson et al, 2009).

If an individual is immunocompromised due to ChemoRx, organ transplant, HIV (affected T-cell mediated immunity) frail aged, etc, then an opportunistic mould infection can result. This can often be fatal. (National Guidelines for the Prevention of Nosocomial Invasive Aspergillosis During Construction/Renovation Activities, 2002).

The most significant fungal species in indoor air is probably A. fumigates the causative agent of acute broncho-pulmonary Aspergillosis.





3 Scope of Works

The report was limited to the areas identified by the client as to the locations requiring monitoring, namely the three (3) storey block of offices, classrooms, library, administration and internal sporting areas.

The objective of the air monitoring assessment (AMA), and where necessary take samples (Swab and Bio-tape impressions) at this site was to:

- Ascertain the taxa and concentrations of fungi present both indoors and outdoors.
- Compare the results to the recommendations of the International Mycology Association and
 Guidelines for the investigation, assessment and remediation of mould in workplaces, March
 2001 (Canada, Workplace safety and Health Division Dept. of Labour and Immigration).
- The scope of works involved the following:
- Walk through inspection of the premises,
 - o Air sampling for Fungal spores
 - o Scientific analysis of selected samples,
 - o Preparation of report for client.





4 Site Visits

The Willyama High School multi-storey campus building was visited by EnviroScience staff on the 16th and 25th January and then on the 20th to the 24th of February 2024, which included visual assessment and sampling to assess the extent of contamination and to identify potential factors which may have increased the likelihood of active microbial growth to occur and spread throughout the multi-storey building.

The table below provides a high-level overview of the various mould assessment conditions and recommended remediation options.





Definitions and high-level remediation of Condition 1, 2 and 3*			
Remediation	Definitions	Porosity of materials	Remediation
Condition 1	Normal fungal ecology	Porous	No action required
		Semi-porous	No action required
		Non-porous	No action required
Condition 2	Settled spores or fungal fragments	Porous	Restore – Launder or surface cleaning using HEPA vacuuming, damp wiping
		Semi-porous	Restore - Surface cleaning using HEPA vacuuming, damp wiping
		Non-porous	Restore - Surface cleaning using HEPA vacuuming, damp wiping
Condition 3	on 3 Actual fungal growth	Porous	Dispose
		Semi-porous	Restore - Abrasive methods, wire brushing, sanding, media blasting.
		Non-porous	Restore - Surface cleaning using HEPA vacuuming, damp wiping
*Adapted from IIC	RC R520:2015 Reference Gu	uide for Professional M	Iold Remediation





It should be noted that there is only a vague history of latent moisture issues, to support the germination and growth of fungal elements for this occurrence.

The following table summarises the visual observations and supporting laboratory analysis made by various EnviroScience staff.

Table 1: Si	Table 1: Site Inspections Willyama High School			
Date	Area	Visual Observations	Fieldwork	
16 th Jan	Three (3) Storey	Exhibited extensive visible	Swabs and Bio-tape	
2024	Campus Building -	mould, on floor walls,	impressions were	
	Northern, Western and	ceilings, furniture, books,	taken and transported	
	Eastern areas.	documents, and clothing,	to EnviroScience	
	Consisting of	throughout entire building,	Solutions Head Office	
	Classrooms and Library	(Note: The Administration-	and Laboratory at 2/3	
		Southern Area, was not	Douglas Mawson	
		inspected).	Road, Dubbo NSW	
			2830.	
			Initial Swabs and	
			BioTapes indicate a	
			IICRC-520:2015. IICRC-	
			520:2015 Condition 3	
			guidelines confirming	
			the presence of active	
			microbial growth.	
25 th Jan	Three (3) Storey	Extensive visible mould in	Air samples were	
2024	Campus Building -	Northern, Western and	taken and transported	
	Northern, Western,	Eastern Sections,	to EnviroScience	
	Eastern and Southern	separate/isolated air	Solutions Head Office	





		\	T
Date	Area	Visual Observations	Fieldwork
	areas. Consisting of	conditioning system to	and Laboratory at 2/3
	Classrooms, Library and	Southern area (namely	Douglas Mawson
	Administration	Administration).	Road, Dubbo NSW
		Gaps in Asbestos Register	2830.
		where mould was sighted,	Initial air counts in the
		additional sampling under	Administration Block
		controlled conditions	only indicate a
		required for further	Condition 1, Ref IICRC
		documentation of scope.	520:2015.
20 th to	Three (3) Storey	Extensive visible mould in	Air samples were
24 th Feb	Campus Building -	Northern, Western and	taken and transported
2024	Northern, Western,	Eastern Sections,	to EnviroScience
	Eastern and Southern	separate/isolated air	Solutions Head Office
	areas. Consisting of	conditioning system to	and Laboratory at 2/3
	Classrooms, Library and	Southern area (namely	Douglas Mawson
	Administration	Administration).	Road, Dubbo NSW
			2830.
			Recommend that the
			entire southern
			section be remediated
			under IICRC-520:2015
			Condition 2 guidelines
			as a precautionary
			measure.





All site inspections visually confirmed the presence of mould throughout the three-storey campus block in the North, West and Eastern sections of the building consisting of the various classrooms and the library. A walk through of the building, revealed several rooms (see floor plans and images), which exhibited extensive visible mould, on floors, walls, ceilings, services including the Heating, ventilation, and air conditioning (HVAC) system(s), furniture, books, electronic devices, documents and clothing.





5 Field Work and Calculations

Air monitoring undertaken used a SKC Quick Take 30 constant flow diaphragm pump with a Sieve Impactor attachment. Samples were collected onto Malt Extract Agar (MEA) whereby 100 litres of air were passed over each plate for 5 minutes i.e. 20L/min.

The agar plates were transported in an esky to the EnviroScience Solutions laboratory where they were incubated at 30°C for 5 - 7 days.

Fungal colonies on swabs and Bio-tape spores were identified to a genus level using a slide preparation stained with Lactophenol Cotton Blue: Ref David Ellis, "Description of Medical Fungi", School of Molecular Science, University of Adelaide (2007). "Identifying Fungi – A clinical Laboratory Handbook" St-Germaine & Summerbell (2011).





6 Results

6.1 Three (3) Storey Campus Building - Northern, Western and Eastern areas

LOCATION of Surface Swabs 16 th Jan 2024	ORGANISM grown
R01-30158-S01	Growth of Cladosporium, Alternaria, Rhyzopus spp
Room AR-ON-11, floor	
	Rhyzopus spp 400x magnification
R01-30158-S02	Growth of Alternaria, Bipolaris and Mucor spp, and
Room AR-IE -26, Floor	environmental bacilli
	Bipolaris spp 400x magnification
	Mucor spp 400x magnification

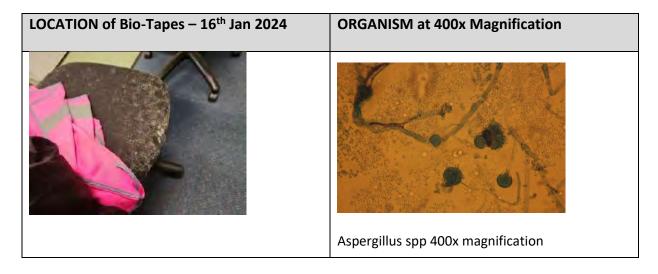


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LOCATION of Bio-Tapes – 16 th Jan 2024	ORGANISM at 400x Magnification
R01-30158-S03 Room AR-OW-18, floor	Spores of Cladosporium and Penicillium spp detected.
	Penicillium spp 400x magnification
R01-30158-S04	Occasional spores of Cladosporium spp detected.
AR-ON-11, Drum kit, skin	Cladosporium spp 400x magnification
R01-30158-S05	Spores of Aspergillus and Alternaria spp detected.
AR-ON-08, fabric chair.	Alternaria spp 400x magnification







The tables above, coupled with the visual inspection, indicates the fungal spore counts in the affected rooms of the Willyama High School, Broken Hill, would be above the outside control and the WHO Guidelines for fungal spores in room air.

The visual inspection and the above tables indicate extensive, active mould growth and therefore potential elevated levels of fungal spores within the affected rooms, is a Condition, 3 (Ref IICRC-520:2015).

The swabs and Bio-tape impressions show spores and active growth of the environmental moulds Cladosporium, Alternaria, and Mucor spp. However, there is evidence that Aspergillus and Penicillium spp, which are recognised human pathogens are also present in several locations tested, and invariably more widespread throughout.

6.2 Administration Campus Building - Southern areas

No visible mould was sighted within the administration building (Southern Building), and some windows were open within this building, additionally it was observed that the HVAC system operated separately to the main classrooms and library sections of the multistorey building.





Air Results – 25 th January 2024			
TOTAL VIABLE	FUNGAL COLONIES – CFU/m³	BACTERIAL COLONIES	
SPORE COUNT -		- CFU*/m³	
CFU*/m³			
180	120 Alternaria spp	N/A	
	50 Cladosporium spp		
	60 Mucor spp		
	60 Bipolaris spp		
	10 Penicillium spp		
80	60 Alternaria spp	20	
	10 Penicillium spp		
	40 Rhyzopus spp		
60	60 Alternaria spp	20	
	30 Cladosporium spp		
	TOTAL VIABLE SPORE COUNT - CFU*/m³ 180	TOTAL VIABLE SPORE COUNT - CFU*/m³ 120 Alternaria spp 50 Cladosporium spp 60 Mucor spp 60 Bipolaris spp 10 Penicillium spp 80 60 Alternaria spp 40 Rhyzopus spp 60 Alternaria spp	

The results in the above table indicate the counts in the Administration Block are a Condition 1, Ref IICRC-520:2015, and as such it is suitable for occupation by staff.

International guidelines suggest fungal concentrations of <500CFU/m³ is a reasonable threshold for indoor environments and more than 50CFU/m³ of a single species (other than Cladosporium or Alternaria spp) may be reason for concern. When assessing fungal contamination of indoor air, both concentration (CFU/m³) and diversity play a role in identifying potential problems and evaluating the biological quality of the air. Low diversity and high concentration may indicate a potential indoor source of contamination. High diversity and moderate/high concentration may not strictly be an indicator of a specific indoor issue depending on its relationship to outdoor results.

The outside air sampled in the playground showed a spore count of 180, however, this is to be expected in the environment in which these fungi are ubiquitous as plant saprophytes.





Air Results – Week 20 th February 2024			
LOCATION	TOTAL VIABLE SPORE COUNT – CFU*/m³	FUNGAL COLONIES – CFU/m³	BACTERIAL COLONIES – CFU*/m³
R03-30158-	60	Environmental fungi	33
01AR1503 - Entry			
R03-30158-S02	110	Environmental fungi	20
AR1501 - Deputy			
R03-30158-S03	170	60 Alternaria spp	20
AR1506 - Clinic		30 Cladosporium spp	
		70 Mucor spp	
		10 penicillium spp	
R03-30158-S04	40	Environmental fungi	20
AR1S13 - Clerical			
R03-30158-S05	30	Environmental fungi	30
AR1S14 - Clerical			
R03-30158-S06	30	Environmental fungi	50
AR1507 - Printing			
R03-30158-S07	20	Environmental fungi	10
AR1508 - Clerical			
R03-30158-S08	30	Environmental fungi	30
AR1509 - Principal			
R03-30158-S09	180	40 Cladosporium spp	60
AR0522 – Practical		50 Alternaria spp	
		40 Mucor Spp	
		50 Bipolaris spp	
R03-30158-S10	130	60 Alternaria spp	N/A
Outside Control - Rear		40 Cladosporium spp	
		20 Rhyzopus spp	
		10 Penicillium spp	





The results in the above table indicate that Rooms AR1506 and AR0522 are above the outside control, but below the WHO guidelines. In this current setting, the rooms would be best left closed to staff.

International guidelines suggest fungal concentrations of <500CFU/m³ is a reasonable threshold for indoor environments and more than 50CFU/m³ of a single species (other than Cladosporium spp or Alternaria spp) may be reason for concern. When assessing fungal contamination of indoor air, both concentration (CFU/m³) and diversity play a role in identifying potential problems and evaluating the biological quality of the air. Low diversity and high concentration may indicate a potential indoor source of contamination. High diversity and moderate/high concentration may not strictly be an indicator of a specific indoor issue depending on its relationship to outdoor results.

The outside air sampled in the playground showed a spore count of 130, however, this is to be expected in the environment in which these fungi are ubiquitous as plant saprophytes.

It is recommended that the entire southern section be remediated under IICRC-520:2015 Condition 2 guidelines as a precautionary classification for remediation works.





7 Discussion

7.1 Methodology

Australians spend approximately 90% of their time indoors and each building has its own set of circumstances. Air quality may be determined by the site of the building, its design, renovations, whether air handling systems have been maintained, occupant densities and activities conducted within the building.

Many common Indoor Air Quality (IAQ) problems are associated with improperly designed and/or operated and maintained heating, ventilating and air conditioning systems HVAC, overcrowding, moisture incursion and dampness, and poor design due to the lack of natural ventilation.

Natural ventilation refers to the process of using natural airflows to cool and ventilate indoor spaces... it replaces stale air with fresh air. By harnessing the power of wind and temperature differences, this technique reduces the reliance on mechanical cooling systems, leading to numerous benefits for the environment, economic savings and social benefits for the building occupants. Increasing the amount of natural ventilation into buildings should improve general indoor air quality by reducing the buildup of pollutants, odours, humidity, energy consumption and the amount of noise from compressors and fans. Socially it provides the indoor occupants a connection between indoor and outdoor spaces with increased natural light and views. The building occupants will see increases in productivity, focus, mood, and performance. In an educational setting this would be likely to improve focus and concentration spans and naturally academic performance. Natural ventilation also builds contingency and resilience during energy or system failures.

Australian IAQ guidelines pertain to the comfort of occupants and not exposure standards, they are designed to ensure that all members of the public are protected ensuring general Work Health and Safety obligations are met. Air quality guidelines in this report have been sourced from a number of organisations and are referenced below.

IIRC S520 Standard and reference Guide for Professional Mould Remediation

Australian State of the Environment Report IAQ Ambient air Quality (2016)

Handbook: Indoor Air Quality Australian Building Codes Board (2021)

The mould impacted areas extend throughout all the three levels, encompassing the northern, western and eastern areas of the building.





The southern section (Admin / Sport) operates under a separate evaporative air- conditioning system and is structurally separate from the North, East and Western Sections.

However, in both areas of the building poor building design was observed:

- Lack of natural ventilation, with all windows being small thereby not allowing natural lighting and could not be opened to allow for natural ventilation. Internal classrooms had floor vents which could not be cleaned adequately.
- Water egress issues noted with the large box guttering on the roof and leaking in various internal and external walls.
- Additionally, storage facilities were limited which meant areas could not be routinely and adequately cleaned.
- It was also noted that a retrofit of the original evaporative air conditioning system was supplemented with additional wall units, and this *may be* contributing to the poor air circulation and exchanges throughout the building and general air quality of the indoor air.

7.2 Ground Floor - Three (3) Storey Campus Building - Northern, Western and Eastern areas

The most heavily impacted areas within the ground floor were the Music faculty and Art Faculty. Microbial growth was also present to both the Design and Technology Faculty and Food-tech Faculty. although, to a lesser extent. The Art faculty is situated on the north - western aspect of the building and the Music Faulty is situated on the Northern side of the building. The Bio-Tape samples taken from this area (R01-30158-S01) returned as IICRC IICRC-520:2015 Condition 3 guidelines confirming the presence of active microbial growth. Suspected visual microbial growth was generally noted on majority of building materials (porous and non-porous) and majority of contents (porous and non-porous) throughout both areas.

Visual microbial growth was noted throughout both the Design and Technology and Food-tech faculties. However, to a lesser extent than the Art and Music Faculties. The Food-tech faculty appears to have been regularly cleaned to a satisfactory standard. Despite this, traces of sporadic visual microbial growth were noted throughout. Visual microbial growth throughout the design and technology classrooms were minor with visual microbial growth noted to specific areas including





inside chip board cupboards and on porous clothing. This is likely a result of the increased ventilation in this area which would have been designed to control saw dust and metal work fumes. Despite this, the staff study (AROE14) in this area was heavily impacted by visual mould growth. Visual mould was noted to the carpet floors, clothing and other porous and non-porous contents throughout staff rooms.

Leaching to brickwork was noted to be present to ground floor walls however, there were no clear signs of a specific water ingress event that could be directly linked to the microbial growth identified. As such, the active microbial growth present throughout this area is likely associated with the limited sunlight, limited ventilation and humidity which was noticeably worse in this area in comparison to other areas of the building.

It is recommended that the entire Northern, Western and Eastern, multistorey building be remediated under IICRC-520:2015 guidelines.

7.3 Level 1 - Three (3) Storey Campus Building - Northern, Western and Eastern areas

In comparison to the ground floor, the microbial growth noted throughout level 1 was less significant but still significantly infested with mould growth. Level 1 areas that were more noticeably affected include but are not limited to the staff areas, carpeted rooms and thoroughfares. The swab sample taken from level 1 (R01-30158-S03) returned as IICRC IICRC-520:2015 Condition 3 guidelines confirming the presence of active mould growth throughout this area. It is likely that the mould growth identified throughout level one originated from the Music and Art Faculties located on the ground floor and were dispersed via the evaporative cooling system. Following the dispersion of microbial spores throughout level 1 it is likely that areas of level with elevated humidity were able to harbor active mould which would likely explain the sporadic fashion in which the visual mould was identified throughout level 1.

It is recommended that the entire Northern, Western and Eastern, multistorey building be remediated under IICRC-520:2015 Condition 3 guidelines.





7.4 Level 2 Three (3) Storey Campus Building - Northern, Western and Eastern areas

Visual mould growth was identified throughout level 2, however to a much lesser extent than both level 1 and ground floor. Visual mould growth identified throughout level 2 was still visually observed. Due to the enclosed nature of the building and evaporative air conditioning system it is likely that microbial spores dispersed from ground floor and level 1 have contaminated most, if not all areas of level 2.

It is recommended that the entire Northern, Western and Eastern, multistorey building be remediated under IICRC-520:2015 Condition 3 guidelines.

7.5 Administration Campus Building - Southern areas

No signs of visual mould growth were identified throughout all areas of the southern section of the building. Despite this, total airborne mould concentrations noted on the internal samples taken from the 'AR1506- Clinic' and 'AR0522- Practical' were slightly elevated when compared to the outside control sample. However, because the mould genus types detected both internal samples mentioned above were generally comparable to the mould genus types detected on the external control sample it is difficult to conclude that the elevated levels were caused by an internal source.

EnviroScience Solutions recommends that the entire southern section be remediated under IICRC-520:2015 Condition 2 guidelines as a precautionary measure.





8 Conclusions and Recommendations

EnviroScience Solutions was unable to determine the exact cause of the microbial growth. However, following a detailed inspection of every room of the building EnviroScience Solutions believes that there were several key factors likely to be contributors.

These contributing factors include:

Moisture created from within the building — Oratory information provided by Department of Education staff expressed to EnviroScience Solutions staff when they attended the school for the initial inspection on the 16th of January 2024, indicated that the carpets had been cleaned and that the air conditioning system was operational during the shutdown period. With the increase in moisture from the wet carpets and the mechanical HVAC operational, coupled with the lack of natural ventilation due to the windows not being able to be opened, this may have provided an ideal environment to support the mould infestation. The overall building design with the lack of fresh air with no windows being able to open is likely to provide the right conditions for mould growth. The current indoor air quality is likely to add to increased condensation. Lack of sunlight, poor insulation and possibly the HVAC retrofit of the original evaporative air conditioning system which was supplemented with additional wall units could be contributing factors as well.

Water Ingress from outside — large box guttering and large storm events not coping with existing design with evidence of structural faults such as leaching to brickwork. Of note there was a considerable rainfall event in January with data obtained from the Australian Government Bureau of Meteorology website (http://www.bom.gov.au/), at the Broken Hill Airport Automatic Weather Station site. The mean rainfall since 1947 to 2024 in January was 29.3mm and relative humidity ranged between 25% and 41%. Between the 4th and 9th January 2024, 118mm of rain was recorded at the Broken Hill site, approximately four (4) times the mean rainfall, in a single event over the six (6) days. The relative humidity over this rain event averaged 68% which is well above the mean for January historically. Existing infrastructure with increased climatic events of this magnitude may not be able to cope with these types of events.





Building general hygiene – overcrowding and inadequate storage facilities, not allowing for general routine cleaning and allowing organic debris to accumulate and thereby provide a potential growing medium.

Unless these potential issues are permanently fixed and resolved, even after remediation works the reoccurrence of mould growth is likely.

EnviroScience Solutions recommends that all levels and rooms of the impacted building (North, South and Western) be treated as IICRC-520:2015 Condition 3 guidelines, and the administrative area in the Southern of the building be treated precautionary as IICRC-520:2015 Condition 2.

The site map included in Appendix A shows the areas to be treated as IICRC-520:2015 Condition 3 guidelines. Please refer to Appendix D for full site images.

It is recommended that a detailed scope of works be prepared for remediation this will include destructive testing and inspection to determine if additional water/moisture problems are identified within wall and ceiling cavities, these works will need to be undertaken under controlled conditions during remediation works.

Additionally other hazards, namely asbestos and lead (pB) paint will need to be identified and incorporated into the scope of works. Of note some asbestos products and lead (pB) paint surfaces will not be able to be remediated and will need to be removed due to their porous nature as they may be damaged during the physical abrasiveness of remediation works.

Additionally porous materials generally cannot be successfully remediated under the *IICRC-520:2015 Condition 3 guidelines* this would apply to the current vermiculite sprayed ceiling fire retardant, carpets, paper products, furnishings, HVAC systems and electronics.

When considering and designing the scope of works the building envelope will need to be segregated into separate areas for the purpose of remediation; Structural, HVAC and Contents. The following table gives a high-level guidance for remediation under IICRC-520:2015 Condition 3 guidelines, sourced from IICRC R520: 2015 Reference Guide for Professional Mold Remediation.





uilding egment	Porosity*	Materials	Remediation
Structural Remediation	Porous	Plasterboard, ceiling tiles, insulation, particle/chipboard, fibre cement sheet, medium density fibreboard, carpet, vermiculite and similar coatings	Discard
	Semi- porous	Wood, brick, plaster, concrete, plywood	Abrasive methods, wire brushing, sanding, media blasting or other appropriate methods
	Non- porous	Glass, metal, laminate, plastic, porcelain, ceramic	HEPA vacuuming, liquid based methods
HVAC Remediation	Porous	Insulation, filters, flexible ducting, metal coils	Discard
	Semi- porous	Adhesives	Abrasive methods, wire brushing, sanding, media blasting or other appropriate methods
	Non- porous	Plastic, metal, galvanised steel	HEPA vacuuming, liquid based methods
Contents Remediation	Porous	Clothing and other textiles, padded or upholstered items, leather, taxidermy, paper goods, and many types of fine art	Discard
	Semi- porous	Unfinished wood, masonry	Abrasive methods, wire brushing, sanding, media blasting or other appropriate methods
	Non- porous	Finished wood, glass, metal, plastic	HEPA vacuuming, liquid based methods
*Porous: Mate	erials that eas	sily absorb or adsorb m	noisture and, if organic, can easily support fungal growth
*Semi-Porous:	Materials th	at absorb or adsorb m	oisture slowly and, if organic, can support fungal growth





The above table needs to be considered for the scoping of the project to consider the economic, environmental, and social implications of what is required to remediate the building.

9 Limitations

This report only covers the samples taken as detailed at Willyama High School, the testing and inspection was not destructive; subfloor, most ceiling spaces, wall cavities could not be inspected. Should there be any variation in the site conditions which could influence the result beyond this date, further assessment may be indicated.

Despite all reasonable care and diligence, the conditions encountered, and the concentrations of contaminants measured may not be representative at any other point at the site.

Reported By

Juliet Duffy MSM Syd Uni

Director MAICD

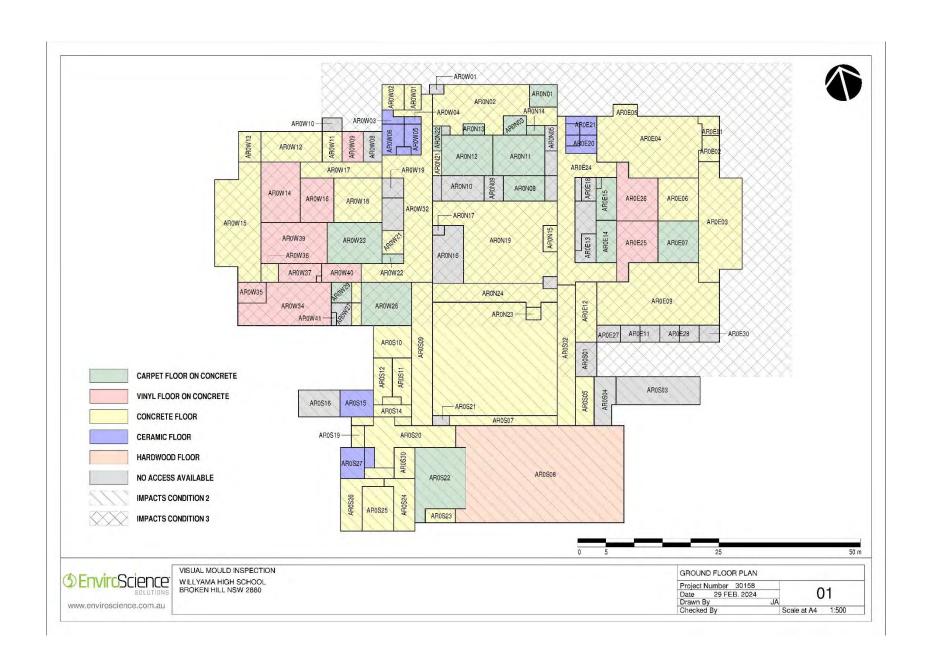
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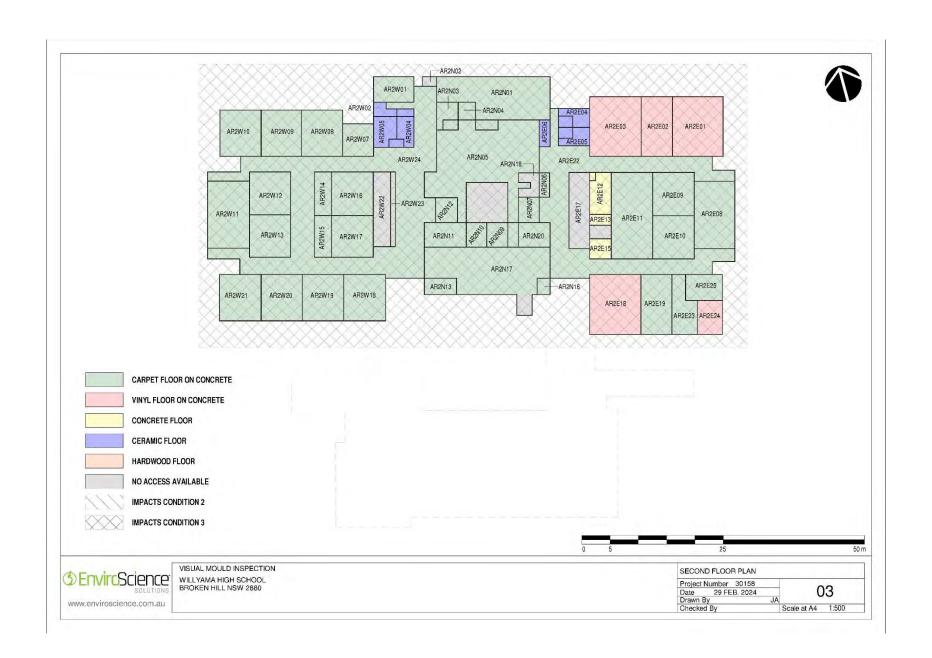




Appendix A: Site Map showing Remediation Areas









Appendix B: Site Images – 16/01/2024 Visit







Image 7: Mould



Image 8: Mould



Image 9: Mould by air-conditioning duct



Image 10: Cabinet, infestation



Image 11: Table top



Image 12: Mould on fabric







Image 14: Kitchen





Image 15: Mould

Image 16: Mould

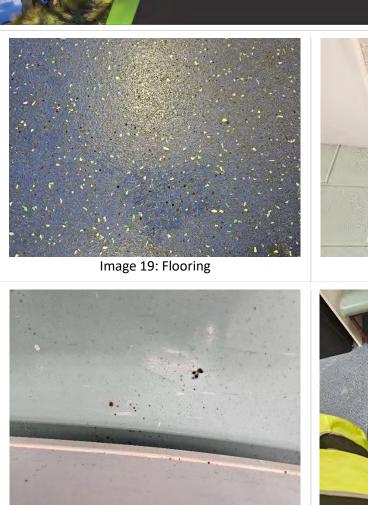




Image 17: Mould

Image 18: Flooring





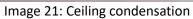




Image 23: Carpet, mould



Image 20: Brick wall



Image 22: Fabric chair



Image 24: Carpet





Image 25: Carpet



Image 26: Fabric chair, mould



Image 27: Fabric chair



Image 28: Drum skins, mold



Image 29: Mould, vinyl sheet floor



Image 30: Drum sticks





Image 31: Instruments and chair



Image 32: Mould, carpet



Image 33: Mould on carpet



Image 34: Mould



Image 35: Mould



Image 36: Mould





Image 37: Mould infestation



Image 38: Mould on carpet



Image 39: Mould, desk chair



Image 40: Shoes, mould



Image 41: Mould, concrete steps



Image 42: Mould





Image 43: Mould

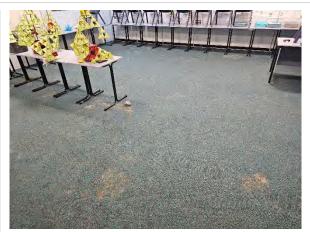


Image 44: Mould



Image 45: Chair



Image 46: Carpet tiles



Image 47: Mould, vinyl sheet



Image 48: Mouse pad



Appendix C: Site Images - February 2024 Visit

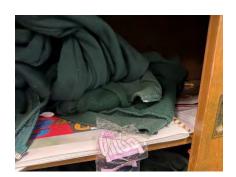
Porous Textiles:

clothing, fabric and other textile items









Porous Furnishings:

area rugs, loos carpet, upholstery, mattresses, wicker and similar items











Paper Goods: books documents, manuscripts, family records, scrapbooks, photographs, and similar items









Fine Art: paintings, sculpture, works of art, and similar items













Appendix D: Visual Inspection February 2024

Photo	Material Type	Description
	Masonry walls, concrete floor and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R0E01 - Welding area		
BOOA-ROEO2 - Materials Store	Masonry walls, concrete floor and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines





Photo	Material Type	Description
	Masonry walls, concrete ceiling and concrete floor.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R0E03 - Plant room		
B00A-R0E04 - Materials Technology Learning Space	Masonry walls, concrete floor and a mix of suspended ceiling tiles and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines



Photo	Material Type	Description
	Masonry wall, ceramic wall tiles, ceramic floor tiles.	Suspected visual mould growth was noted to upper section of masonry wall. Evaporative water stains noted to ceramic floor tiles. IICRC-520:2015 Condition 3 guidelines
B00A-R0E20 - Boys Toilet		
	Masonry wall, ceramic wall tiles, ceramic floor tiles.	No signs of visual mould growth were noted. Evaporative water stains noted to ceramic floor tiles. IICRC-520:2015 Condition 3 guidelines
B00A-R0E21 - Girls Toilet		



Photo	Material Type	Description
PYE PROJECTION AREA	Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling.	Traces of suspected visual mould were noted to concrete floor and lower section of masonry wall. IICRC-520:2015 Condition 3 guidelines
B00A-R0E24 - Movement		
B00A-R0E06 - Design LS	Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry walls, vinyl floor sheeting, composite ceiling panels.	Suspected visual mould growth was noted to leather boots on shoe rack. Traces of suspected visual mould growth noted inside bench cupboard. Refer to index photo 18. IICRC-520:2015 Condition 3 guidelines
B00A-R0E26 - General LS		
	Masonry walls, vinyl floor sheeting, composite ceiling panels.	Suspected visual mould growth was noted to leather boots on shoe rack. Traces of suspected visual mould growth noted to inside sink top cupboard. IICRC-520:2015 Condition 3 guidelines
B00A-R0E25 - General LS		



Photo	Material Type	Description
B00A-R0E07 - Design LS	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling	Suspected visual mould growth was noted to carpet and hardwood cupboard. Refer to Index photo 19. IICRC-520:2015 Condition 3 guidelines
B00A-R0E14 - Staff Study		Suspected visual mould growth was noted to carpet, porous furniture and porous contents. Refer to Index photos 20 - 25. IICRC-520:2015 Condition 3 guidelines



Photo	Matarial Tuna	Doscription
BOOA-ROE09 - Materials LS	Material Type Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling	Suspected visual mould growth was noted to chipboard cabinetry. Refer to Index photo 28. IICRC-520:2015 Condition 3 guidelines
B00A-R0E12 - Store room	Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling	No signs of visual mould growth were noted. Water ingress (leaching) was noted to the upper section of masonry wall. Refer to index photo 26 - 27. IICRC-520:2015 Condition 3 guidelines



Distri	BALL STATE	D
Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould were noted to chipboard shelves, chipboard benchtop and porous contents. Refer to index photo 29 - 31. IICRC-520:2015 Condition 3 guidelines
B00A-R0E18 - Store room		
B00A-R0N12 - Music LS	Masonry walls, plasterboard walls, carpet over concrete and acoustic ceiling tiles.	Suspected visual mould growth was noted to carpet, plasterboard wall, all furniture and all contents. Refer to index photo 32 - 40. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry walls, plasterboard walls, carpet over concrete and acoustic ceiling tiles.	Suspected visual mould growth was noted to carpet, plasterboard wall, all furniture and all contents. Refer to index photos 41 - 48.
B00A-R0N11 - Music Practice Room		IICRC-520:2015 Condition 3 guidelines
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet, all furniture and all contents. Refer to Index photos 49 - 62.
		IICRC-520:2015 Condition 3 guidelines
B00A-R0N08 - Staff Study		



Photo	Material Type	Description
B00A-R0W32 - Movement	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Traces of suspected visual mould growth were noted to the concrete floor, lower sections of masonry walls, hardwood furniture and artworks. IICRC-520:2015 Condition 3 guidelines
B00A-R0N21 - Cleaning Store	Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling	Traces of suspected visual mould growth were noted to chipboard shelving unit. Refer to Index photos 63 - 66. IICRC-520:2015 Condition 3 guidelines



	Masonry walls, carpet over	No signs of visual marila
		No signs of visual mould growth or water damage were noted. Refer to index photos 67 - 68. IICRC-520:2015 Condition 3 guidelines
B00A-R0N22 - GA office		
		Suspected visual mould growth was noted to ceramic floor tiles, masonry walls, ceramic wall tiles and concrete ceiling. Refer to index photos 70 - 77. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Concrete ceiling, ceramic, masonry walls, ceramic wall tiles and ceramic floor tiles.	Suspected visual mould growth was noted to ceramic floor tiles, masonry walls, ceramic wall tiles and concrete ceiling. Refer to index photos. 78 - 81 IICRC-520:2015 Condition 3 guidelines
B00A-R0W06 - Girl's toilet B00A-R0W04 - Staff Toilet	Concrete ceiling, masonry walls and ceramic floor tiles.	No signs of visual mould growth were noted. Evaporative water stains were noted to ceramic floor tiles. Refer to index photos 82 - 83. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Concrete ceiling, ceramic, masonry walls, ceramic wall tiles and ceramic floor tiles.	No signs of visual mould growth were noted. Evaporative water stains were noted to ceramic floor tiles. IICRC-520:2015 Condition 3 guidelines
B00A-R0W03 - Staff Toilet		
	Concrete floor, masonry walls and sprayed coating (vermiculite) ceiling.	Traces of suspected visual mould growth were noted to concrete floor, lower sections of masonry walls and art works. Refer to index photos 85 - 86. IICRC-520:2015 Condition 3 guidelines
B00A-R0W02 - Movement		



Photo	Material Type	Description
B00A-R0N19 - Movement	Concrete floor, masonry walls and sprayed coating (vermiculite) ceiling.	Traces of suspected visual mould noted to floor, lower sections of masonry wall and art works. IICRC-520:2015 Condition 3 guidelines
B00A-R0W26 - Special Learning Space	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. Refer to index photos 88 - 92. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R0W23 - Materials Technology L. S	Masonry walls, concrete ceiling and carpet over concrete.	Suspected visual mould growth was noted to carpet, porous furniture and within benchtop cupboard. Refer to index photos 92 - 97. IICRC-520:2015 Condition 3 guidelines
B00A-R0W22 - Storeroom	Masonry walls, concrete ceiling and carpet over concrete.	No signs of visual mould or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry walls, concrete ceiling and concrete floor.	No signs of visual mould or water damage were noted.
		Refer to index photos 98- 101.
		IICRC-520:2015 Condition 3 guidelines
B00A-R0W21 - Store Room		
CAKE DECORATING WHAT'S COOKING IN THE MITCHEN?	Masonry walls, vinyl floor sheeting and sprayed coating (vermiculite) ceiling.	Suspected visual mould was noted to leather boots within shoe rack. Refer to index photos. 102-104 IICRC-520:2015 Condition 3 guidelines
B00A-R0W40 - Movement		



Photo	Material Type	Description
B00A-R0W34 - Food Tech LS	Masonry walls, plasterboard walls and plasterboard ceiling.	Traces of suspected visual mould growth noted to vinyl floor sheeting. Refer to index photos 105 - 113. IICRC-520:2015 Condition 3 guidelines
B00A-R0W29 - Staff Study	Masonry walls, carpet over concrete and concrete ceiling.	Suspected visual mould growth was noted to carpet. Refer to index photos 115 - 120. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling	No signs of visual mould or water damage were noted. Refer to index photos 121 - 127. IICRC-520:2015 Condition 3 guidelines
B00A-R0W27 - Storeroom		
B00A-R0W41 - Pantry		Pantry No access Assumed mould growth



Photo	Material Type	Description
	Masonry walls, plasterboard ceiling and vinyl floor sheeting.	No signs of visual mould growth or water damage were noted. Refer to index photos 128 - 131. IICRC-520:2015 Condition 3 guidelines
B00A-R0W35 - Storeroom		
		No access Assumed mould growth
B00A-R0W36 - Pantry		



Photo	Material Type	Description
BOOA-RO37 - Research	Building materials comprised of plasterboard ceiling, plasterboard walls and vinyl floor sheeting.	No signs of visual mould growth or water damage were noted. Refer to index photos 132 - 137. IICRC-520:2015 Condition 3 guidelines
B00A-R0W39 - Food Tech	Plasterboard walls, carpet over concrete and acoustic ceiling tiles.	Traces of suspected visual mould growth was noted to carpet floor. Refer to index photos 138 - 143. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
B00A-R0W17 - Movement	Masonry walls, concrete floor and plasterboard ceiling.	Suspected visual mould growth was noted to masonry walls, concrete floor, plasterboard ceiling and all contents. Refer to index photos 147 - 156. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R0W18 - Art LS	Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling	Suspected visual mould growth was noted to masonry walls, concrete floor, plasterboard ceiling and all contents. Refer to index photos 157 - 163. IICRC-520:2015 Condition 3 guidelines
B00A-R0W08 - Dark Room	Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted chipboard entrance archway. Refer to index photos 167 - 170. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R0W16 - Workshop	Masonry walls, vinyl floor sheeting and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth noted to vinyl floor sheeting, masonry walls and all contents. Refer to B00A- R0W17 + index photo 173. IICRC-520:2015 Condition 3 guidelines
B00A-R0W14 - Art L. S	Masonry walls, vinyl floor sheeting and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth noted to vinyl floor sheeting, masonry walls and all contents. Refer to index photos. 171 - 175 IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry walls, vinyl floor sheeting and sprayed coating (vermiculite) ceiling.	Traces of suspected visual mould growth was noted to porous contents. Refer to index photos. 176 - 180 IICRC-520:2015 Condition 3 guidelines
B00A-R0W12 - Art L. S		
	Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth noted to hardwood shelving unit. Refer to index photos 181 - 186. IICRC-520:2015 Condition 3 guidelines
B00A-R0W11 - Kiln		





Photo	Material Type	Description
B00A-R0W09 - Printing	Masonry walls, vinyl floor sheeting and sprayed coating (vermiculite) ceiling	Suspected visual mould growth was noted to porous contents. Refer to index photos 187. IICRC-520:2015 Condition 3 guidelines
BOOK NOVOS TTINLING	Masonry walls, concrete floor and plasterboard	No signs of visual mould growth or water damage
B00A-R0W13 - Storeroom	ceiling.	were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
DOWN DIESS. Science I. S.	Plasterboard walls, perforated plasterboard ceiling and carpet over concrete.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
BOOA-R1E22 - Science L. S BOOA-R1E21 - Preparation	Plasterboard walls, perforated plasterboard ceiling and carpet over concrete.	No signs of visual mould growth were noted. Evaporative water stains were noted to vinyl floor sheeting. Refer to index photos 188 -193. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R1E20 - Science L. S	Plasterboard walls, perforated plasterboard ceiling and carpet over concrete.	No signs of visual mould growth were noted. Evaporative water stains were noted to tabletops. Refer to index photo 194. IICRC-520:2015 Condition 3 guidelines
B00A-R1E13 Plant	Concrete walls, concrete floor and concrete ceiling.	Suspected visual mould growth noted to hardwood door and architraves. Refer to index photo 196. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R1E12 Computer learning space	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth were noted. Water stains were noted to carpet. Refer to index photos 197 - 200. IICRC-520:2015 Condition 3 guidelines
B00A-R1E14 General LS	plasterboard ceiling and carpet over concrete.	Traces of suspected visual mould growth were noted to carpet. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
B00A-R1E15 Staff study		No access Assumed mould
		No sees Assumed
B00A-R1E18 Staff study		No access Assumed mould
BOOA-R1E09 - App Store	Masonry walls, concrete floor and plasterboard ceiling.	No signs of visible mould or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R1E10 Staff study	coating (vermiculite) ceiling.	Suspected visual mould growth was noted to vinyl floor sheeting and fridge. Refer to index photos 202 - 204. IICRC-520:2015 Condition 3 guidelines
B00A-R1E01 - Laboratory L. S	Masonry walls, perforated plasterboard ceiling and carpet over concrete.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
CONTROL OF THE PROPERTY OF THE	Masonry walls, vinyl floor sheeting and concrete ceiling.	No signs of visual mould growth were noted. Evaporative water staining was noted to vinyl floor sheeting and benchtops. Refer to index photos 205 - 210. IICRC-520:2015 Condition 3 guidelines
B00A-R1E02 - Preparation		
	Plasterboard walls, perforated plasterboard ceiling and carpet over concrete.	No signs of visual mould growth were noted. Water stains were noted to carpet. Refer to index photos 211 - 212. IICRC-520:2015 Condition 3 guidelines
B00A-R1E03 - Lab L. S		



Photo	Material Type	Description
	Masonry walls, ceramic wall tiles, ceramic floor tiles and concrete ceiling.	growth was noted to chipboard 'splashback' behind sink mirror.
		Refer to index photos 213 - 216.
		IICRC-520:2015 Condition 3 guidelines
B00A-R1E07 Boys Toilet		
	Masonry walls, ceramic wall tiles, ceramic floor tiles and concrete ceiling.	Suspected visual mould growth was noted to the toilet seat. Refer to index photo 217. IICRC-520:2015 Condition 3 guidelines
B00A-R1E06 Staff Toilet		



Photo	Material Type	Description
		No access Assumed mould
B00A-R1E05 Staff Toilet		
	Masonry walls, ceramic wall tiles, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth. Evaporative water stains were noted to ceramic floor tiles. IICRC-520:2015 Condition 3 guidelines
B00A-R1E04 Girls Toilet		



Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floor and porous couches. Refer to index photos 218 - 225. IICRC-520:2015 Condition 3 guidelines
B00A-R1N05 - Library		
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R1N03 - Work room		



Photo	Material Type	Description
		Suspected visual mould growth was noted on the couch. Refer to index photos 226 - 227. IICRC-520:2015 Condition 3 guidelines
B00A-R1N09 - Librarian		
B00A-R108 - Storeroom	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to porous contents. Refer to index photo 228. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
B00A-R1N04 - Storeroom		Storeroom no access Assumed mould
B00A-R1N07 Storeroom		No access
B00A-R1W23 - Staff Study	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to the carpet floor and porous contents. Refer to index photos 230 - 238. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R1W24 - Store room B00A-R1W25 - Staff study		Suspected visual mould growth was noted to the carpet. Refer to index photos 239 - 240. IICRC-520:2015 Condition 3 guidelines Suspected visual mould growth was noted to all building materials and contents. Refer to index photos 242 - 259. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R1W22 - General L. S		
B00A-R1W21 - General L. S	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floor and all contents. Refer to index photos 261 - 267. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Refer to index photos
The second of th		268 - 270. IICRC-520:2015 Condition 3 guidelines
B00A-R1W20 - General L. S		
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Traces of suspected visual mould growth was noted to the carpet floor. Refer to index photos
Cosbable		271 - 275. IICRC-520:2015 Condition 3 guidelines
B00A-R1W19 - General L. S		





Photo	Material Type	Description
B00A-R1W15 - Computer L. S	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Sporadic patches of suspected visible mould growth were noted to carpet and porous contents. Refer to index photos 276 - 278. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R1W17 - General L. S	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floor and all contents. Refer to index photos 281 - 287. IICRC-520:2015 Condition 3 guidelines
BOOA-R1W16 - General L. S	Plasterboard walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floor and chairs. Refer to index photos 288 - 293. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floor. Refer to index photos. 294 - 297 IICRC-520:2015 Condition 3 guidelines
B00A-R1W13 - General L. S		
ACIES OF DESCRIPTION	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floor. Refer to index photos 298 - 304. IICRC-520:2015 Condition 3 guidelines
B00A-R1W12 - General L. S		





over concrete coating (vermi) BOOA-R1W11 - General L. S Masonry walls concrete and some concrete and	erial Type	Description
Masonry walls concrete an	rd walls, carpet ete and sprayed miculite) ceiling.	Suspected visual mould growth was noted to carpet, benchtop cupboard and porous contents. Refer to index photos 305 - 307. IICRC-520:2015 Condition 3 guidelines
concrete ar	-11	No signs of visual manual
B00A-R1W10 - Storeroom	and sprayed miculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floor and porous contents. Refer to index photos 308 - 309. IICRC-520:2015 Condition 3 guidelines
B00A-R109 - Sensory Zone		
	Concrete ceiling, masonry walls and ceramic floor tiles.	No signs of visible mould growth were noted. Evaporative water stains were noted to ceramic floor. IICRC-520:2015 Condition 3 guidelines
B00A-R1W07 - Girl's Toilet		



Photo	Material Type	Description
	Concrete ceiling, masonry walls and ceramic floor tiles.	No signs of visible mould growth were noted. Evaporative water stains were noted to ceramic floor tiles. Refer to index photos. 310 - 311 IICRC-520:2015 Condition 3 guidelines
B00A-R1W06 - Boys Toilet		
	Plasterboard suspended ceiling tiles, plasterboard walls and vinyl floor sheeting.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R1W04 - Staff Toilet		



Photo	Material Type	Description
B00A-R1W01 - Staff Study	Masonry walls, vinyl floor sheeting and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R1N01 - Staff	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floors. Refer to index photos. 312 - 316 IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R2N16 - Uniform Shop	Masonry walls, carpet over concrete and fibre cement ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2N17 - Movement	Masonry walls, carpet over concrete and plasterboard ceiling.	No signs of visual mould growth or water damage were noted. Refer to index photos 317 - 318. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2N07 - Workshop		
B00A-R2N05 - Library Mezzanine	Plasterboard walls and carpet over concrete.	No signs of visual mould growth. Liquid stains noted to carpet. Refer to index photos 319. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R2N05 - Library	Plasterboard walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were. IICRC-520:2015 Condition 3 guidelines
B00A-R2E12 - App Store	Masonry walls, concrete floor and fibre cement ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines *Hazardous Chemicals Present*



Photo	Material Type	Description
B00A-R2E11 - Staff	Masonry walls, carpet over concrete and plasterboard ceiling.	Suspected visual mould growth was noted to the carpet floor, hardwood desk and porous contents. IICRC-520:2015 Condition 3 guidelines
B00A-R2E09 - General L. S	Masonry walls, carpet over concrete and plasterboard ceiling.	Suspected visual mould growth was noted to carpet floor. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R2E01 - Lab L. S	Masonry walls, vinyl floor sheeting and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth were noted to building materials or contents. However, suspected visual mould growth was noted to paper towel in water trough. Refer to index photo 326. IICRC-520:2015 Condition 3 guidelines
B00A-R2E02 - Preparation	Masonry walls, vinyl floor sheeting, plasterboard ceiling.	No signs of visual mould growth were noted. Signs of water damage (in the form of swelling) were noted to the hardwood cupboards. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R2E03 - Lab	Masonry walls, vinyl floor sheeting and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to the plush in corner tap. No signs of visual mould growth or water damage were noted to building materials. Refer to index photos 327 - 328. IICRC-520:2015 Condition 3 guidelines
B00A-R2E15 - Storeroom	Masonry walls, concrete floor and fibre cement ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R2E13 - Storeroom	Masonry walls, concrete floor and fibre cement ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
	Masonry walls, vinyl floor sheeting and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. However, staining (likely grease) was present to couch. Refer to index photos 330 - 331. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Plasterboard walls, perforated plasterboard ceiling and carpet over concrete.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2E19 - Prep		
FROM CAPPAR AND	Plasterboard walls, perforated plasterboard ceiling and carpet over concrete.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2E23 - Student Kitchen		





BOOA-R2E25 - Staff Study Masonry walls, carpet over concrete and fibre cement ceiling. No signs of visual mould growth or water damage were noted.	Photo	Material Type	Description
Masonry walls, carpet over concrete and fibre cement ceiling. No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines		perforated plasterboard ceiling and carpet over	growth or water damage were noted. IICRC-520:2015 Condition
concrete and fibre cement ceiling. growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines	B00A-R2E25 - Staff Study		
		concrete and fibre cement	growth or water damage were noted. IICRC-520:2015 Condition





Photo	Material Type	Description
	Masonry walls, ceramic floor tiles and concrete ceiling,	No signs of visual mould growth were noted. Signs of water damage were noted to plywood sheet covering mirror and evaporative water stains were noted to ceramic floor tiles. IICRC-520:2015 Condition 3 guidelines
B00A-R2E05 - Boys Toilet		
B00A-R2E04 - Girl's toilet	Masonry walls, ceramic floor tiles and concrete ceiling,	No signs of visual mould growth were noted. Evaporative water stains were noted to ceramic floor tiles. IICRC-520:2015 Condition 3 guidelines





Masonry walls, ceramic floor	No signs of visual mould
tiles and concrete ceiling,	growth were noted. Evaporative water stains were noted to ceramic floor tiles. IICRC-520:2015 Condition 3 guidelines
Masonry walls, carpet over	No signs of visual mould
concrete and sprayed coating (vermiculite) ceiling.	growth or water damage were noted.
	IICRC-520:2015 Condition 3 guidelines
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Photo	Material Type	Description
	Masonry walls, carpet over concrete and plasterboard ceiling.	No signs of visual mould growth or water damage were noted. Refer to index photos 333-334. IICRC-520:2015 Condition 3 guidelines
B00A-R2N09 - Interview Room		
B00A-R2N10 - Interview	Masonry walls, carpet over concrete and plasterboard ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Plasterboard walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth were noted. Signs of water ingress (in the form of brown staining) was noted to the cornice. Refer to index photos. 335-336 IICRC-520:2015 Condition 3 guidelines
B00A-R2N11 - Workroom		
B00A-R2N12 - Workroom	Masonry walls, carpet over concrete and plasterboard ceiling.	Trades of suspected visual mould growth were noted to the carpet floor. Refer to index photos 338-340. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry walls, carpet over concrete and plasterboard ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2N03 - Storeroom		
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2N04 - Storeroom		



Photo	Material Type	Description
B00A-R2N01 - General L. S	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth were noted. Liquid staining was noted to carpet adjacent to western doorway. Refer to index photos 341. IICRC-520:2015 Condition 3 guidelines
B00A-R2W18 - General L. S	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth were noted. Liquid stains were noted to carpet floor. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2W19 - General L. S		
B00A-R2W20 - General L. S	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry wall, carpet over concrete and plasterboard ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2W21 - General L. S		
B00A-R2W17 - Interview	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted to building materials or contents. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted within cabinetry beneath sink. Refer to index photos. 342 IICRC-520:2015 Condition 3 guidelines
B00A-R2W14 - Printing	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
To the second se	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Traces of suspected visual mould growth were noted to carpet. Refer to index photos 344. IICRC-520:2015 Condition 3 guidelines
B00A-R2W16 General L. S		
B00A-R2W11 - Computer L. S	Masonry walls, carpet over concrete and plasterboard ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2W13 - General L. S		
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to chair and pillow. Refer to index photos 345-346. IICRC-520:2015 Condition 3 guidelines
B00A-R2W12 - General L. S		



Photo	Material Type	Description
B00A-R2W10 - General L. S	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth were noted. Water damage (in the form of leaching) was noted to ceiling and upper sections of masonry wall. Refer to index photos. 347 IICRC-520:2015 Condition 3 guidelines
B00A-R2W09 - General L. S	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2W08 - General L. S		
B00A-R2W07 Staff Study	Masonry walls, carpet over concrete and plasterboard ceiling.	Suspected visual mould growth was noted to porous contents. Refer to index photos 348 - 352. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
B00A-R1S01 - Deputy	Masonry walls, carpet over concrete and plasterboard ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R1S03 - Entry	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines



Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R1S06 - Sick Bay		
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R1S07 - Printing		



Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R1S08 - Clerical		
B00A-R1S09 - Principal	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines



Photo	Material Type	Description
B00A-R1S14 - Clerical	coating (vermiculite) ceiling.	*Add 'tape-lift' sample results* - Staining Present on seat Refer to index photo 353. IICRC-520:2015 Condition 2 guidelines
B00A-R1S15 - Clerical	Masonry walls, carpet over concrete and plasterboard ceiling lining over sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines



Photo	Material Type	Description
B00A-R1S10 - Staff Toilet	Ceramic wall tiles, ceramic floor tiles and fibre cement ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R1S11 Staff Toilet	Ceramic wall tiles, ceramic floor tiles and fibre cement ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines





	Ceramic wall tiles, ceramic floor tiles and fibre cement ceiling.	No signs of visual mould growth or water damage
		were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R1S12 - Staff Toilet		
B00A-R0S08 - Multipurpose Space	Masonry walls, hardwood floor and acoustic ceiling tiles.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines





Photo	Material Type	Description
BOOA-ROSO3 - Storeroom	Masonry walls, concrete floor and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R0S22 - Practice		No signs of visual mould growth or water damage were noted. Refer to index photos 354 - 356. IICRC-520:2015 Condition 2 guidelines





Photo	Material Type	Description
	Masonry walls, concrete floor and concrete ceiling.	No signs of visual mould growth or water damage were noted. Refer to index photos 357, 359. IICRC-520:2015 Condition 2 guidelines
B00A-R1S16 - Control Room		
	Masonry walls, ceramic wall tiles, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R0S27 - Girls Toilet		



Photo	Material Type	Description
	Masonry walls, ceramic floor tiles and concrete ceiling.	
B00A-RS024 - Change Room		
B00A-R0S25 - Showers	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines





Photo	Material Type	Description
	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R0S24 - Change Room		
	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R0S30 - Equipment Store		





Photo	Material Type	Description
B00A-R0S20 - Movement	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines



Photo	Material Type	Description
	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R0S12 - Change Room		
	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 2 guidelines
B00A-R0S11 - Change Room		





Photo	Material Type	Description
B00A-R0S10 - Showers	Masonry walls, ceramic floor tiles and concrete ceiling.	Suspected visual mould growth was noted to porous contents. Room was in a general state of disarray. IICRC-520:2015 Condition 2 guidelines
B00A-R0S05 - Equipment Store		No signs of visual mould growth were noted. Water ingress (in the form of leaching) was noted to the upper sections of masonry walls. Refer to index photos 360 - 361. IICRC-520:2015 Condition 2 guidelines
B00A-R0S04 - Chair Store		No access, keys provided
		did not open.
		Assumed mould



Photo	Material Type	Description
	Masonry walls, carpet over concrete and concrete ceiling.	Suspected visual mould growth was noted to the carpet and all contents. Refer to index photos 362 - 363. IICRC-520:2015 Condition 3 guidelines
B00A-R0N13 - Music Store		
	Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to all contents. IICRC-520:2015 Condition 3 guidelines
B00A-R0N05 - Maintenance Cupboard		



Photo	Material Type	Description
	Masonry walls, concrete ceiling and concrete floors.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R0N02 - Plant		
B00A-R1E15 - Staff Study	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floor and porous contents. Refer to index photos 364 - 369. IICRC-520:2015 Condition 3 guidelines





DOOM DATAC CLIFF CLIFF		Description
B00A-R1E16 - Staff Study	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floor and porous contents. Refer to index photos 370 - 371 IICRC-520:2015 Condition 3 guidelines
B00A-R1E16 - Math Storeroom	Masonry walls, concrete floor and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
B00A-R1E10 - General L. S	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to carpet floor. IICRC-520:2015 Condition 3 guidelines
B00A-R2E08 - Music L. S	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2N13 - Staff Study	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	Suspected visual mould growth was noted to linoleum skirting. IICRC-520:2015 Condition 3 guidelines





Photo	Material Type	Description
	Masonry walls, carpet over concrete and sprayed coating (vermiculite) ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2W01 - Store Room		
BOOA-RWO2 - Staff Toilet	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines



Photo	Material Type	Description
	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2W03 - Staff Toilet		
	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-R2W04 - Boys Toilet		





Photo	Material Type	Description
	Masonry walls, ceramic floor tiles and concrete ceiling.	No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
B00A-2W05 - Girls Toilet		
	Masonry walls, ceramic floor tiles and concrete ceiling.	Unable to identify room from floor plan. No signs of visual mould growth or water damage were noted. IICRC-520:2015 Condition 3 guidelines
CS-7 Cleaning cupboard		





Appendix E: IICRC R520: 2015 Reference Guide for Professional Mold Remediation — Chapter 13 Contents Remediation

Porous Ifems		
Category	Condition 2	Condition 3
Category General		Condition 3 Condition 3 porous contents generally are not restorable, and disposal normally is recommended. All items should be examined first for unrestorable water damage before extensive attempts to remove mold growth are made. Usually unrestorable due to staining, discoloration, or fiber damage. However, if an item is of sufficient value (e.g., sentimental, monetary, legal, artistic, cultural, or historical), cleaning may be attempted, using techniques described for Condition 2. If heavy odors exist, multiple cleanings and deodorizing attempts may be needed. Organic materials that are highly susceptible to mold growth, such as leather objects, animal trophy heads, and similar items, are not restorable when Condition 3.
Porous Textiles: clothing, fabric, and other textile items	Usually can be laundered or dry-cleaned as appropriate for the fabric as shown on the manufacturer's label. Laundering: Using detergent in the laundering process facilitates removing contaminants. Laundry sanitizers can be added, if textile manufacturer directions permit. They might help reduce microorganism growth, and significantly reduce odors. For those fabrics that are not chlorine bleach safe, addition of oxygen bleaches, such as sodium perborate or sodium percarbonate can provide similar benefits, if permitted by manufacturer directions. The laundering process also can be enhanced by increasing the water temperature. Care should be taken not to exceed the manufacturer's water temperature recommendations. Dry Cleaning: As with laundering, dry cleaning typically will follow manufacturer label recommendations, as well as those standard quality practices of the dry cleaning industry, relative to	Most cleaning processes should start and end with HEPA vacuuming. Rapid drying after wet cleaning and appearance enhancement, as necessary, follows most cleaning methods. Usually unrestorable due to staining, discoloration or fiber damage. However, if the item is of sufficient value (e.g., sentimental, monetary, legal, artistic, cultural, or historical), cleaning may be attempted, using the techniques described for Condition 2. If heavy odors exist, multiple cleanings and deodorization attempts may be needed. For items of high financial or sentimental value, specialty remediation techniques may be possible.

Porous Items		
Category	Condition 2	Condition 3
	fabric or material type. In addition to the traditional solvent-based process, new liquid carbon dioxide dry cleaning and other alternatives are available, and can be better suited for some items. As with laundering, the primary goal of dry cleaning is the physical removal of contaminants and associated odors, rather than killing microorganisms. Repeat laundering or dry cleaning may be needed to satisfactorily eliminate mold odors, as well as to provide an additional measure of assurance of maximum contaminant removal. The decision to conduct multiple launderings or dry cleanings involves professional judgment in consultation with the contents' owner and other materially interested parties.	
Porous Furnishings: area rugs, loose carpet, upholstery, mattresses, wicker, and similar items	Most cleaning processes should start and end with HEPAvacuuming. If items have not been used while contaminated, HEPA-vacuum thoroughly and professionally clean by an acceptable extraction method following the IICRC \$300, Standard and Reference Guide for Professional Upholstery Cleaning. Thorough moisture extraction and rapid drying are critical if this procedure is to be successful. As with clothing and soft goods, deodorizing severely contaminated contents may be conducted with appropriate techniques. One or more repeat cleanings may be needed to remove odors and further reduce contaminant levels. With all items, accelerated drying is critical. Appearance enhancement, as necessary, follows all cleaning methods. Area rugs and carpet may be cleanable in a controlled, in-plant facility (see IICRC \$500, Chapter 16 Contents Evaluation and Restoration). Determining the severity of contamination may necessitate an assessment. Spreading spores during the cleaning process is a potential problem. Immersion methods that clean rugs or carpet under water are less likely to aerosolize spores. Tapestries and other unpadded items may be HEPA-vacuumed thoroughly or air washed to remove accumulated dust and spores. It is recommended to follow this method with an upholstery cleaning process as specified in the IICRC \$300. Air washing should be performed only in a properly controlled work area, or using controlled techniques where massive aerosolization does not pose a health risk to workers or occupants. If items such as pillows, mattresses, and/or leather products have been used while contaminated, attempts to return the item to Condition 1 usually are unsuccessful. Disposal is recommended.	Usually cannot be effectively remediated and restored to an acceptable condition due to staining and other problems as listed for clothing above. If cleaning is attempted, follow recommendations for Condition 2. Most cleaning processes should star and end with HEPA vacuuming.

	Porous Items	
Category	Condition 2	Condition 3
Paper Goods: books, documents, manuscripts, family records, scrapbooks, photographs, and similar items	Most cleaning processes should start and end with HEPA vacuuming. Clean by HEPA vacuuming and dry brushing or other surface cleaning method, while on a downdraft cleaning table. Air washing can be effective. However, air washing should be performed only in a properly controlled work area, or using controlled techniques where massive aerosolization will not pose a health risk to workers or occupants. Rapid drying after wet cleaning and appearance enhancement, as necessary, follows most cleaning methods. Valuable or irreplaceable documents that cannot be cleaned or decontaminated may be encased, laminated, or otherwise sealed.	Remediation is difficult, costly, and may not be cost-effective if items lack significant value (e.g., sentimental, monetary, legal, artistic, cultural, or historical) Cleaning may require a specialized conservation process, and might not be successful. Valuable or irreplaceable documents that cannot be cleaned or decontaminated may be encased, laminated, or otherwise isolated
Fine Art: paintings, sculpture, works of art, and similar items	Remediating mold-contaminated fine art at Condition 2 should be performed only by qualified, experienced specialists primarily due to the high value of items involved. Actual cleaning techniques parallel those for similar items in other categories, but often require extensive knowledge of the type of artwork in question to avoid damage to the piece.	Remediating mold-contaminated fine art at Condition 3 might not be completely successful, and can be quite expensive. These services should be performed by qualified experienced specialists.

Note: This is not a comprehensive list of all cleaning methods or cleaning method combinations.

Semi-porous Items		
Category	Condition 2	Condition 3
Semi-porous Items: primarily	All items should be examined first for unrestorable water damage.	All items should be examined first for unrestorable water damage or mold damage.
primarily unfinished wood	Cleaning usually is accomplished by HEPA vacuuming or air washing. It is recommended that most cleaning processes both start and end with HEPA vacuuming.	Semi-porous items are often unrestorable due to staining, discoloration and decay caused by mold enzymes unless growth is in a biofilm rather than in the wood.
	Abrasive blast cleaning with an appropriate media may also be effective. Air washing or abrasive blast cleaning should be	If growth is in a biofilm, follow directions for Condition 2.
	performed only in a properly controlled work area using controlled techniques, where the massive aerosolization they cause	Most cleaning processes should start and end with HEPA vacuuming.
	will not pose a health risk to workers or occupants. (See Chapter 5, Equipment Tools and Materials for more information).	If growth has penetrated wood, aggressive cleaning methods such as HEPA-assisted hand sanding, abrasive blast cleaning with an appropriate media, and wire or other aggressive
	Thorough brushing, while on a downdraft- cleaning table is another possible cleaning technique.	brushing (preferably on a downdraft cleaning table) may be required. Abrasive blast cleaning should be performed only in a properly
	Using liquids, especially water-based solutions, can cause staining or discoloration of wood.	controlled work area using controlled techniques where the massive aerosolization it causes will not pose a health risk to workers or occupants. (See Chapter 5, Equipment, Tools and Materials
	Appearance enhancement, as necessary,	for more information).
for U state of the	follows all cleaning methods.	End results of such aggressive cleaning methods may result in an appearance that is unacceptable
	Using liquid-applied coatings to cover surfaces of contents that cannot be adequately cleaned (and disinfected or sanitized when appropriate) is not	to customers. Attempts should be made to determine if results will be acceptable before extensive cleaning is performed.
	recommended. However, using coatings to seal surfaces or restore the appearance of a material can be a useful practice, especially	Using liquids, especially water-based solutions, can cause staining or discoloring wood.
	on porous or semi-porous materials from which the damage from mold cannot be fully eliminated (e.g., shellac, varnish, lacquer, water-based acrylics over unfinished wood).	Appearance enhancement, as necessary, follows all cleaning methods.

Note: This is not a comprehensive list of all cleaning methods or cleaning method combinations.

Nonporous Items		
Category	Condition 2	Condition 3
Nonporous items: finished wood, glass, metal, plastic, electronics, and similar items	All items should be examined first for unrestorable water damage. Usually, cleaning can be accomplished by using one or a combination of the following: detergent washing and rinsing, ultrasonic cleaning, or HEPA vacuuming plus damp wiping with a suitable cleaning agent. Cleaning agents should contain surfactants or detergents designed for the use and purpose of removing surface dirt or mold growth. Remediators may clean (and disinfect or sanitize, when appropriate) with a biocide if, in their professional judgment, such use would be appropriate. However, indiscriminate biocide use is discouraged, and biocides should not be used instead of proper cleaning. Biocides should only be used in accordance with the product label instructions that have been approved and registered by the EPA or other applicable regulatory agency. The addition of this statement will advise remediators that biocide use is a possibility for these contents, but that there are limitations that should be carefully considered before using these products, and that indiscriminate use, or use instead of adequate cleaning, is not proper remediation. Rapid drying after wet cleaning and appearance enhancement, as necessary, follows most cleaning methods.	All items should be examined first for unrestorable water damage. Some glass and plastic items may be etched or stained by long-term exposure to water and associated mold growth. Metal items may be unrestorable due to corrosion, which can be accelerated by acids produced by fungal growth. Usually, cleaning can be accomplished by using one or a combination of the following: detergent washing and rinsing, ultrasonic cleaning, or HEPA vacuuming plus damp wiping with a suitable cleaning agent. Cleaning agents should contain surfactants or detergents designed for the use and purpose of removing surface dirt and or mold growth. Most cleaning processes should start and end with HEPA vacuuming. Remediators may clean (and disinfect or sanitize when appropriate) with a biocide if, in their professional judgment, such use would be appropriate. However, indiscriminate biocide use is discouraged, and biocides should not be used instead of proper cleaning. Biocides should only be used in accordance with product label instructions that have been approved and registered by the EPA or other applicable regulatory agency. This statement advises remediators that biocide use is a possibility for these contents, but that there are limitations that should be carefully considered before using these products, and that indiscriminate use, or use instead of adequate cleaning, is not proper remediation. Rapid drying after wet cleaning and appearance enhancement, as necessary, follows most cleaning methods.

Note: This is not a comprehensive list of all cleaning methods or cleaning method combinations.

HIGH-VALUE AND IRREPLACEABLE CONTENTS

High-value contents are those with high financial value or replacement cost. Irreplaceable contents are those with high historical, sentimental, cultural, artistic, legal, or other types of value. Extraordinary cleaning procedures may be appropriate for these contents. Such procedures can be as simple as repeated cleanings using standard practices as described above, or they may require highly specialized expert services.

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