



Contamination and Hazardous Building Materials Validation

Date 16/12/2019

ENV Solutions Pty Ltd

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Att: Byron Shire Council

10 – 12 Shirley Street Byron Bay NSW 2481

16th December 2019

Byron Shire Council
 70 – 90 Station Street
Mullumbimby NSW 2482

Dear Sir

re: Building validation following contamination and hazardous building material remediation

ENV Solutions Pty Ltd (ENV) have been engaged by Byron Shire Council to compile all building validation documentation following remediation and removal of several identified hazardous building materials and contamination. The following table outlines the contaminant or hazardous building material, remediation contractor, contractor responsible for validation and if remediation was successful.

Table 1 Contaminant and remediation/validation responsibilities

Contaminant/ HAZMAT item	Remediation Contractor	Validation Contractor	Remediation success
Asbestos Containing Material (ACM) Bonded	Tweed Coast Demolition and Excavation (TCDE)	ENV Solutions (ENV)	Yes
Lead Based Paint	Tweed Coast Demolition and Excavation (TCDE)	ENV Solutions (ENV)	Yes
Polychlorinated biphenyls (PCB)	Coughran Electrical	ENV Solutions (ENV)	Yes
Radioactive sand	Bishton Constructions	ENV Solutions (ENV)	Yes
Mould	Biodec	Biodec	Yes

All removal/remediation works were inspected and validated by ENV except for mould remediation. Mould validation sampling and inspection was undertaken by Biodec. As such, if any issues arise in the future regarding the effectiveness of mould remediation, ENV accepts no responsibility for this.

All remediation of known hazardous building materials and contamination is considered validated and the buildings at 10 – 12 Shirly Street are now suitable for occupation for commercial use.

If you have any questions, please contact me anytime.

Yours faithfully,



Jake Rozyn

Environmental Engineer

Licensed Asbestos Assessor LAA001246

ENV Solutions Pty Ltd



Scope of Engagement and Limitations:

This report has been prepared by ENV Solutions PTY LTD (ENV) ABN 58 600 788 814 at the request of Byron Shire Council for the purpose of hazardous building material and contamination remediation validation. No other parties may rely on the contents of this report for any purposes except those stated.

This report has been prepared based on the information provided to us and from other information obtained as a result of enquiries made by us. ENV accepts no responsibility for any loss or damage suffered howsoever arising to any person or corporation who may use or rely on this document for a purpose other than that described above.

No part of this report may be reproduced, stored or transmitted in any form without the prior consent of ENV.

ENV declares that it does not have, nor expects to have, a beneficial interest in the subject project.

To avoid this advice being used inappropriately, it is recommended that you consult with ENV before conveying the information to another who may not fully understand the objectives of the report. This report is meant only for the subject site/project and should not be applied to any other.

Included:

- **Attachment 1:** Asbestos Clearance Certificate
- **Attachment 2:** Lead based paint removal – photographic evidence
- **Attachment 3:** PCB Certificate of Disposal
- **Attachment 4:** Radioactive Sand Remediation Validation
- **Attachment 5:** Mould Post Remediation Inspection and Validation

ATTACHMENT 1

Attachment 1
Asbestos Clearance
Certificate

SECTION A - CLEARANCE INSPECTION DETAILS

Note: Where asbestos removal work requires a Class A licence an independent licenced asbestos assessor must carry out the clearance inspection and complete an asbestos removal clearance certificate if satisfied that the area is safe to reoccupy.

Client Details			
Client Name:	Tweed Coast Demolition and Excavation		
Phone:	07 5513 0287	Mobile:	0420 430 018
Other contact details:			
Removal work details			
Date removal work carried out:	22-23/07/19		
Site address for removal work:	Old Byron Bay Hospital Shirley Street Byron Bay		
Details of the specific asbestos removal work area(s):	Loading dock eaves and eaves from section near generator. Electrical switch board In electrical room, floor in bathroom		
Licenced asbestos removalist			
Name:	Tye Ruddy	Contact:	0420 430 018
Licenced asbestos removalist supervisor (if different from above)			
Name:	As Above	Contact:	As Above
Inspection details			
Date of clearance inspection:	25/07/19		
Time of clearance inspection:	10:00		

SECTION B - ASBESTOS REMOVAL WORK PAPER WORK

	Yes	No
Do you have a copy of the asbestos removal control plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you have a copy of the notification form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the removal work consistent with the control plan and the notification form? (e.g. use	<input checked="" type="checkbox"/>	<input type="checkbox"/>

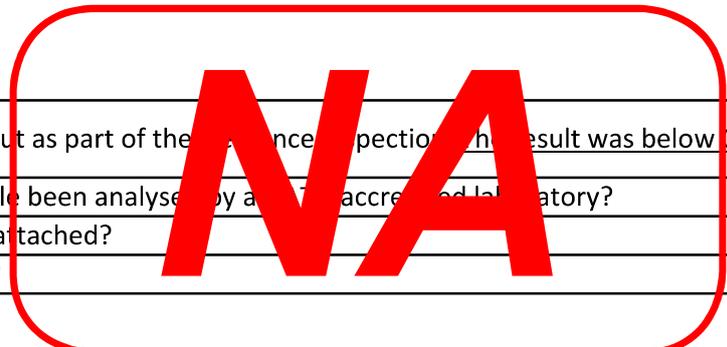
SECTION C - ASBESTOS REMOVAL WORK AREA

1. VISUAL INSPECTION

	Yes	No
Inspection of the specific area detailed in Section A <u>found no visible asbestos</u> remaining as a result of the asbestos removal work carried out.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is air monitoring required? (If no, proceed to Section E)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Can the area be reoccupied?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has additional information been attached? (e.g. photos, drawings, plans)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2. AIR MONITORING

	Yes	No
Air monitoring was carried out as part of the clearance inspection. The result was below 0.01 f/ml.	<input type="checkbox"/>	<input type="checkbox"/>
Has the air monitoring sample been analysed by an accredited laboratory?	<input type="checkbox"/>	<input type="checkbox"/>
Is the air monitoring report attached?	<input type="checkbox"/>	<input type="checkbox"/>
Can the area be reoccupied?	<input type="checkbox"/>	<input type="checkbox"/>



SECTION D - ENCLOSURES

1. Prior to dismantling the enclosure

	Yes	No
The area within the enclosure and the area immediately surrounding the enclosure was inspected and <u>no visible asbestos was found.</u>	<input type="checkbox"/>	<input type="checkbox"/>
Air monitoring was carried out as part of the clearance inspection. The result was below 0.01 f/ml.	<input type="checkbox"/>	<input type="checkbox"/>
Is the air monitoring report attached?	<input type="checkbox"/>	<input type="checkbox"/>
Can the enclosure be dismantled?	<input type="checkbox"/>	<input type="checkbox"/>

Number of samples collected: _____

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
RESULTS					

2. AFTER THE ENCLOSURE WAS DISMANTELED AND REMOVED

	Yes	No
An inspection of the area in which the enclosure was erected and the area immediately surrounding the area where the enclosure was erected was inspected and <u>no visible asbestos was found.</u>	<input type="checkbox"/>	<input type="checkbox"/>
Air monitoring was carried out as part of the clearance inspection. The result was below 0.01 f/ml.	<input type="checkbox"/>	<input type="checkbox"/>
Is the air monitoring report attached?	<input type="checkbox"/>	<input type="checkbox"/>
Can the area be reoccupied?	<input type="checkbox"/>	<input type="checkbox"/>

number of samples collected: _____

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
RESULTS					

SECTION E - CLEARANCE DECLARATION

I declare that:

- the former enclosure, asbestos removal work area and the surrounding area are free from any visible asbestos.
- the transit route and waste routes are free from any asbestos,
- all asbestos in the scope of the removal work has been removed and any known asbestos is intact.



Signature of licenced asbestos assessor/competent person

LAA001246

Assessor licence number (if applicable)

Jake Rozyn

Name of licenced asbestos assessor/competent person

SECTION F - PICTORIAL



Plate1-2: Loading dock ceiling removed. No visible Ac debris remains

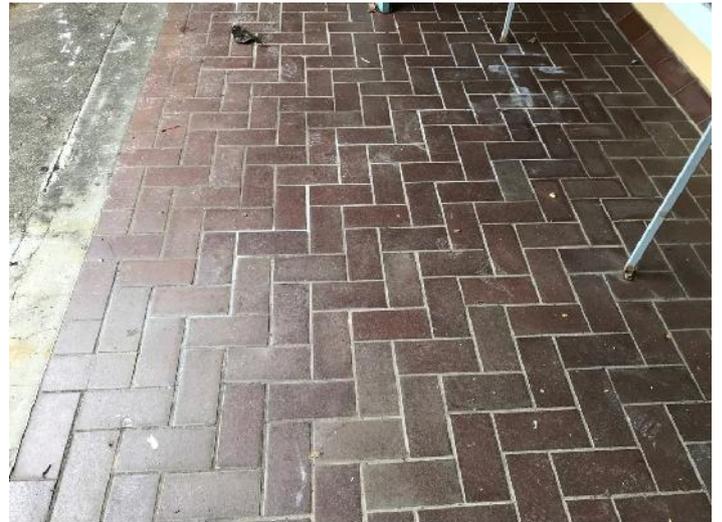


Plate3-4: Loading dock ceiling removed. No visible Ac debris remains on timbers or surface below



Plate5-6: Eave near old generator removed. No visible AC debris remains

SECTION F - PICTORIAL



Plate 7-8: Eave near old generator removed. No visible AC debris remains above or below removal zone

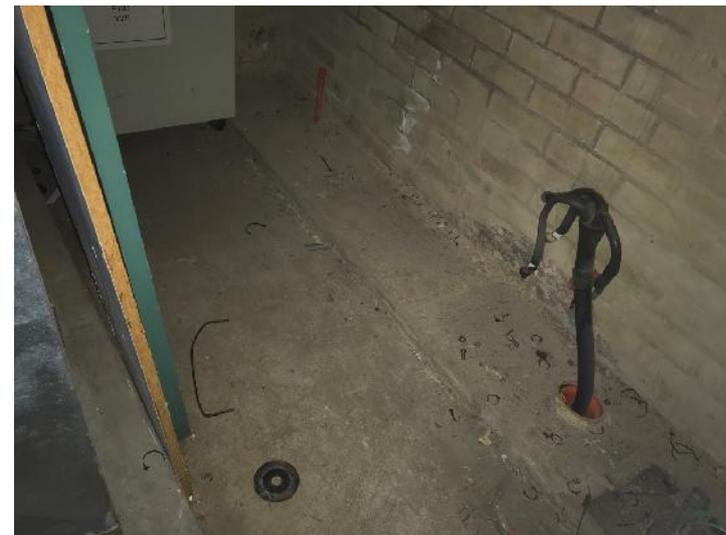


Plate 9: Electrical switchboard removed. Bathroom AC compressed sheeting removed. No visible AC debris remains

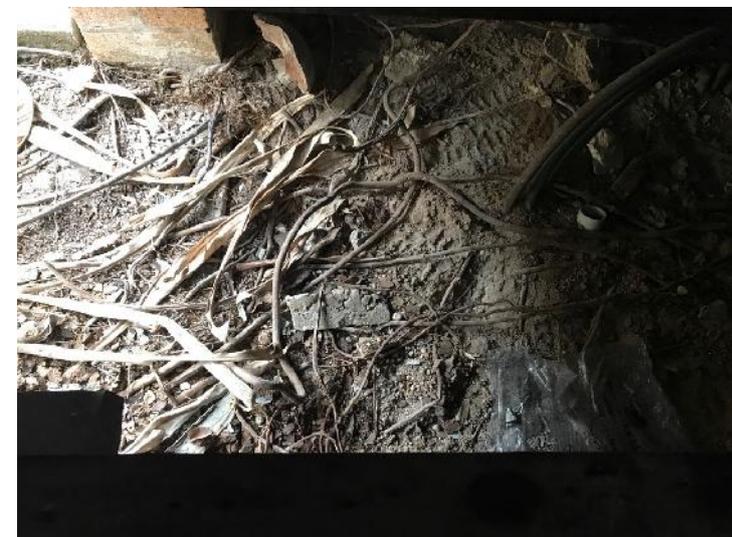


Plate 11: No visible AC debris on surface below removal area. Location

ATTACHMENT 2

Attachment 2 Lead
based paint removal –
photographic evidence



ID1: Both windows containing lead paint systems removed and disposed of.

ID2: No visible paint flakes surrounding removal area.

ATTACHMENT 3

Attachment 3
PCB Certificate of
Disposal



11 Kurrajong Road, North St Marys
P O Box 77 St Marys NSW 1790

Phone: 1300 791 977
Fax: 02 9623 8583

Email: info@coopersenviro.com.au
www.coopersenviro.com.au

COOPER'S

ENVIRONMENTAL WASTE RECYCLING PTY LTD

ABN 49 078 633 182

Certificate of Disposal

To: **Coughran Electrical**

Date: 4th September 2019

Process Details	
Reclassification / Decontamination	<input type="checkbox"/>
Disposal / Recycling	<input checked="" type="checkbox"/>

This is to certify that Coopers Environmental Waste Recycling
Finalised the treatment of the following
M100 - Waste Substances & Articles/ Electrical Equipment containing Polychlorinated
Biphenyls (PCB).

Project Details	
Job Location/s	<i>Coughran Electrical Services - Billinudgel</i>
Transport Certificate	NA
Litres	NA
Transport Certificate	2T01021536
Kilograms	3.00
Lab Report No	NA
Certificate Number	CEWR-2019-186 -ZZ-19J

Certified by:

Ken Elliott
Operations Manager
Licence Number 12473
Cooper's Environmental Waste Recycling

ATTACHMENT 4

Attachment 4
Radioactive Sand
Remediation

Radiation Survey:

19286_10-12_shirley_street, byron bay_radiation survey_20191024

24th October 2019

ENV Solutions Pty Ltd (ENV) have been engaged by Byron Shire Council to undertake a radiation survey of a remediated area of the property at 10 – 12 Shirley Street, Byron Bay, NSW (the area).

This letter has been prepared to summarise the findings of the investigation made by ENV's Environmental Engineer, Jake Rozyn on 24th October 2019. Initial investigations identified elevated radioactive readings within the south west portion of the courtyard located in the middle area of the buildings (see figure attached). Suggested remediation included a capping slab over the entire area of 150 – 200 mm thick. This was completed by Bishton Constructions in October 2019.

A radiation survey was undertaken across the area utilising a 'Soeks 0.1M Prime' Gieger counter. An approximate 1 m x 1 m grid was set up over the area to ensure even coverage was achieved, reference to the sample locations can be found in Figure 3, **Attachment 4**. During the survey, radiation levels were measured from approximately 1.0 metre above the concrete slab. Radiation levels were observed between 0.11 and 0.48 $\mu\text{Sv/h}$, with the highest readings noted in the south-east of the area.

The trigger criteria for clean-up and disposal of radioactive residues from commercial operations involving mineral sands are covered in NSW via a document titled Radiation Safety Information Series (RSIS) 12, July 1984 [3], which includes the following action level criteria:

- for dwellings, schools, businesses, factories etc. where occupancies by the same individuals occurs regularly on a day to day basis, remedial action level should be 0.7 $\mu\text{Sv/h}$.

On this basis the observed background radiation levels are considered acceptable for commercial use.

Should you have any queries regarding information contained within this report, please do not hesitate to contact me.

Yours faithfully,



Jake Rozyn

Environmental Engineer

ENV Solutions Pty Ltd



Site

Figure 1 - Site Location
10 – 12 Shirley Street Byron Bay NSW

Client: Byron Shire Council
Radiation Remediation Validation
Date: 24/10/19

Consultant: Jake Rozyn
Phone: 0435 857 751

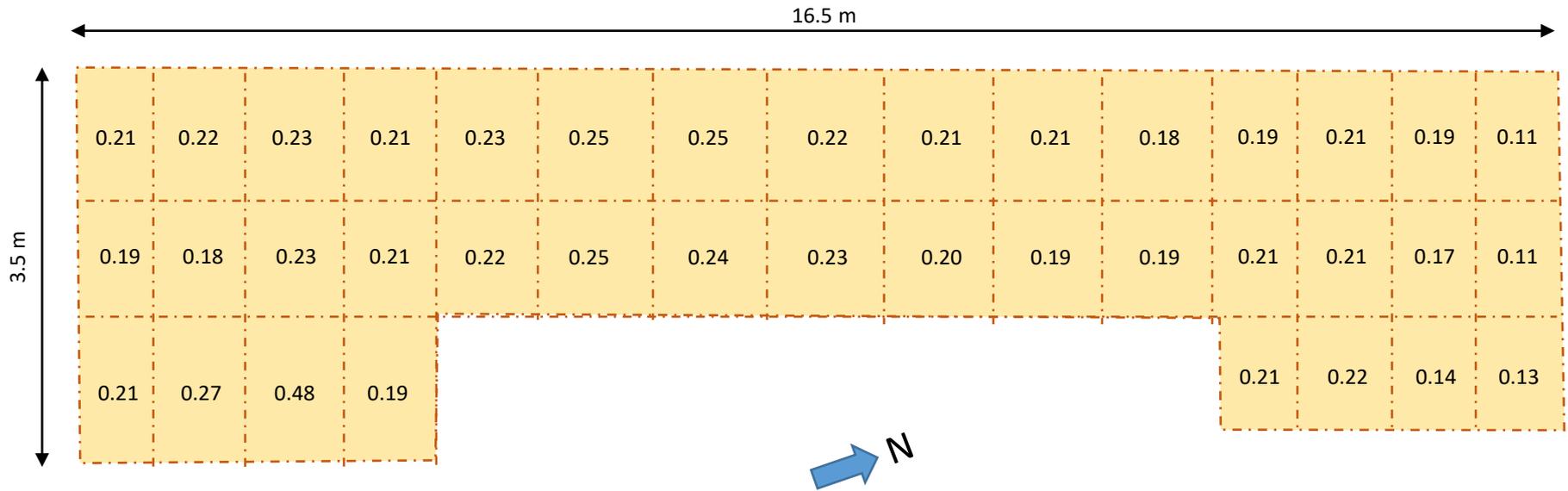


 Remediation Area

Figure 2 - Area Location
10 – 12 Shirley Street Byron Bay NSW

Client: Byron Shire Council
Radiation Remediation Validation
Date: 24/10/19

Consultant: Jake Rozyn
Phone: 0435 857 751



All measurements in microsievert/hour ($\mu\text{Sv/h}$)



Figure 3 – Radiation Readings
10 – 12 Shirley Street Byron Bay NSW

Client: Byron Shire Council
Radiation Remediation Validation
Date: 24/10/19

Consultant: Jake Rozyn
Phone: 0435 857 751

ATTACHMENT 5

Attachment 5
Mould Post Remediation
Inspection and Validation

Post Remediation Inspection and Validation

Claim ID

Old Byron Bay Hospital

Claim Date

December 1, 2019

Address

10-12 Shirley St, Byron Bay NSW 2481,
Australia

Policyholder Name

Byron Shire Council

Insurance Company

N/A

Policy Number

N/A

Policyholder Email

mcrosbie@byron.nsw.gov.au

Report Details

The works conducted were inspected after completion for outstanding items from the scope of works.

All areas highlighted as being problematic from the original inspection by ENV Solutions had been addressed along with several others that were identified by BIODEC.

All remediation was completed as per the IICRC S520 Standards for Mold Remediation which primarily revolved around source removal to Condition 2 and HEPA Vacuum to condition 1. No attempts were made to "treat" mould or encapsulate.

All surfaces exhibiting superficial growth (glass, painted doors etc) were washed with Benzalkonium chloride to remove the particulate.

It must be taken into account that there were extremely high winds in the previous 48 hrs with large bushfires upwind. This in conjunction with poor sealing in block 1 and open ceilings will allow outdoor pollutants to pass through. The sample results reflected this so Rank Ordering was employed to determine success of remediation.

The resulting counts, while high in number, were in direct reflection of the outdoor baseline in ordering and genera.

Claim Details

Post Remedial Validation (PRV) following mould remov

Table of Contents

Block 1

Overview Photos	3
Photo Notes	3

Block 2

Overview Photos	5
Photo Notes	5

Block 3

Overview Photos	7
Photo Notes	7

Morgue

Overview Photos	8
Photo Notes	8

Sample Results

Photo Notes	9
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Block 1

OVERVIEW PHOTOS: Block 1



PHOTO NOTES: Block 1

Wash Room



Office



Outside Site Office



Outside Change Rooms



Electrical And HVAC



Records Room



Block 2

OVERVIEW PHOTOS: Block 2



PHOTO NOTES: Block 2

Picture Note



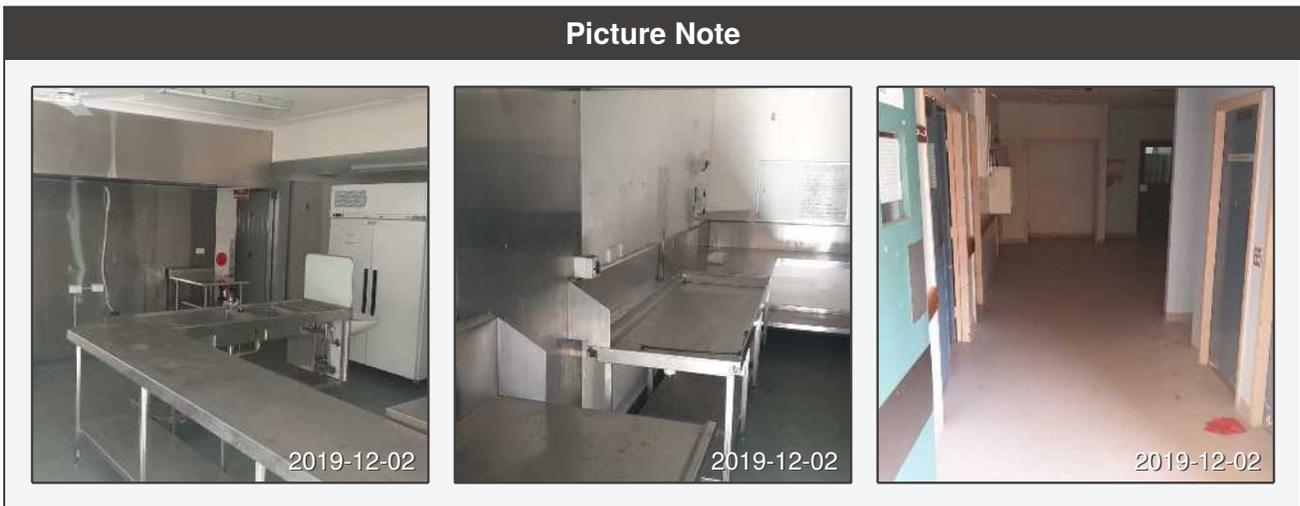
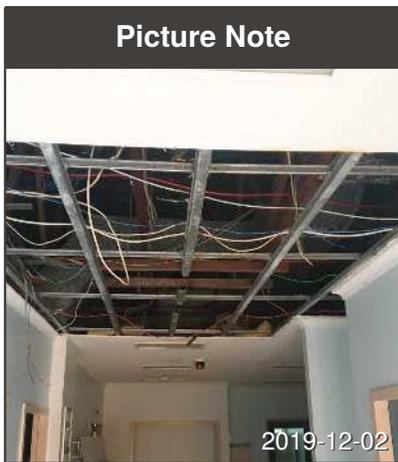


Block 3

OVERVIEW PHOTOS: Block 3



PHOTO NOTES: Block 3





Morgue

OVERVIEW PHOTOS: Morgue



PHOTO NOTES: Morgue

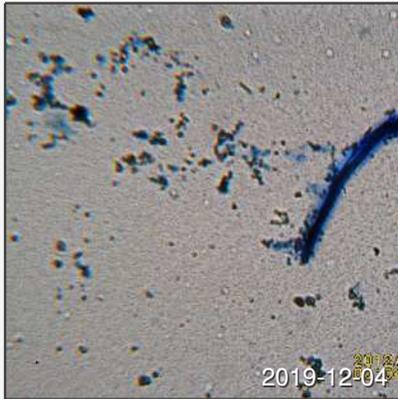
Picture Note



Sample Results

PHOTO NOTES: Sample Results

PRV Baseline - Outdoor



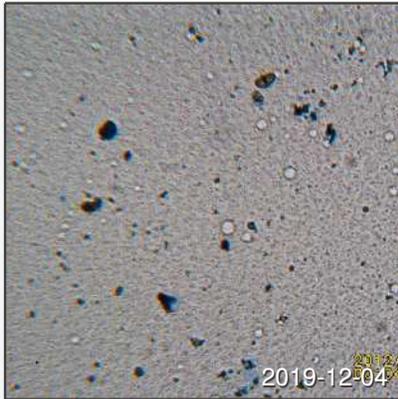
A sample was taken of the outdoor air as a benchmark for Rank Ordering. General Identification was not critical as the work scope was not generated via species identification, rather organic loading as affected by known water intrusion points which were identified on the generated Scope of Works. The attached microscopy photo shows the TSC (Total Spore Count) of outdoors on the day. Of note is the high presence of conidiophore, clusters and siliceous material.

This is likely due to two factors.

- 1) Upwind there were bush fire burning causing high levels of pollutants over the past several days. (Bushfires release high levels of conidiophores and other fungal particulate)
- 2) The previous 48 hrs had experienced very strong winds from the same direction.

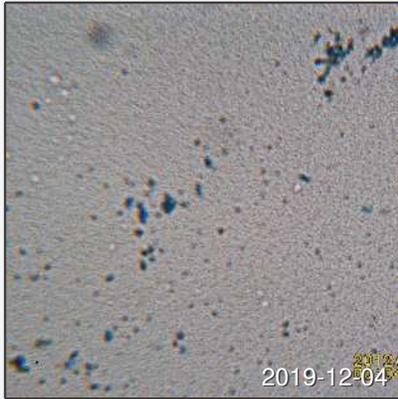
The TSC was 18920 with general spread being common to outdoors near wild vegetation.

PRV Sample - Block 1



The area around the atrium had previously presented a very high organic load as a result of significant fungal activity on the lower walls and support stud in the office. This area was completely de-lined to remove structure as required. An air sample was obtained near the major works. TSC load was comparable to outdoors and within 10% of the RANK as per the Worldwide Standard for Mould and Bacteria and the Worldwide Standards for Post Remedial Validation. TSC was 21053 with the same genera ordering (Cladosporium). Worthy of note is the high level of potential infiltration to Block 1 with no door seals and it being the most upwind part of the building.

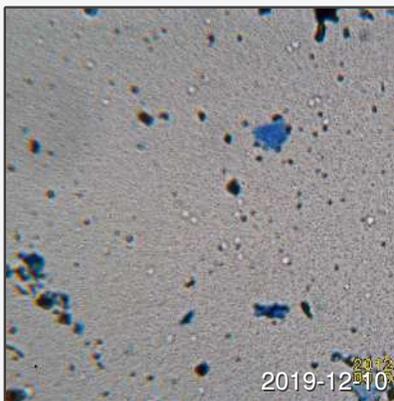
Block 2



The primary remedial works in block 1 related to the records room behind reception and adjacent to the kitchen. This area required significant structural removal and reinstatement to reinforce the structure.

Linings were found to be affected beyond the original scope and these were removed also. The linen storage was also remediated. Sampling was taken from the hall adjacent to the reception. The TSC was 2573; less than 20% of the outdoor sample with the same genera spread and predominant species.

Block 3 - PRV



The primary area of concern was the ceiling where the roof leaked just above the entry to the Emergency Ward. This was removed and cleaned as well as the entire ward.

The TSC was 1280; approximately 8% of that obtained from outdoors with the same Rank Ordering as the outdoor sample.

AEML Test: A001 Spore Trap Analysis

Sample ID:	191210N009	191210N010	191210N011	191210N012
Client Sample ID:	Outdoor	Block 1	Block 2	Block 3
Volume Sampled (L):	75	75	75	75
Media:	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell
Percent of Trace Analysed:	100% at 600X Magnification			

Spore Types	Raw Count	Count/m ³	%	Raw Count	Count/m ³	%	Raw Count	Count/m ³	%	Raw Count	Count/m ³	%
Alternaria	1	13	<1	1	13	<1	1	13	<1	—	—	—
Arthrinium	—	—	—	—	—	—	—	—	—	—	—	—
Ascospores	9	120	<1	22	293	1	15	200	8	17	227	18
Aspergillus/Penicillium-Like	—	—	—	—	—	—	2	27	1	—	—	—
Basidiospores	1	13	<1	—	—	—	—	—	—	—	—	—
Bipolaris/Dreschlera	—	—	—	—	—	—	—	—	—	1	13	1
Botrytis	—	—	—	—	—	—	—	—	—	—	—	—
Chaetomium	1	13	<1	3	40	<1	1	13	<1	—	—	—
Cladosporium	1,377*	18,360	97	1,548*	20,640	98	165	2,200	85	72	960	75
Curvularia	—	—	—	—	—	—	2	27	1	—	—	—
Epicoccum	—	—	—	—	—	—	—	—	—	3	40	3
Fusarium	—	—	—	—	—	—	—	—	—	—	—	—
Ganoderma	30	400	2	3	40	<1	6	80	3	1	13	1
Memnoniella	—	—	—	—	—	—	—	—	—	—	—	—
Nigrospora	—	—	—	—	—	—	—	—	—	1	13	1
Oidium/Peronospora	—	—	—	—	—	—	—	—	—	—	—	—
Pithomyces	—	—	—	1	13	<1	1	13	<1	1	13	1
Rust	—	—	—	—	—	—	—	—	—	—	—	—
Smut/Myxomyces/Periconia	—	—	—	—	—	—	—	—	—	—	—	—
Stachybotrys	—	—	—	—	—	—	—	—	—	—	—	—
Torula	—	—	—	—	—	—	—	—	—	—	—	—
Ulocladium	—	—	—	—	—	—	—	—	—	—	—	—
Unidentified Spores	—	—	—	—	—	—	—	—	—	—	—	—
Total Spores	1,419	18,920		1,579	21,053		193	2,573		96	1,280	
Hyphal Fragments	—	—	—	—	—	—	—	—	—	2	27	—
Pollen	2	27	—	4	53	—	—	—	—	3	40	—
Debris Rating	4	—	—	4	—	—	4	—	—	3	—	—
Detection Limit	13	—	—	13	—	—	13	—	—	13	—	—

* Estimation performed due to high count.



Cimona Fernandes
 Project Manager