

Monday, 20<sup>th</sup> November 2018

C/- 38 Black Street  
Brighton Victoria

Dear Dr. Damien Louis and Mr. Tony Gavan,

**Biosafety Reference: 2018090**

**RE: Review of Microbiological Report Summary of Brick and Mortar and Wall Void Testing by Dr. Cameron Jones of Biological Health Services at 38 Black Street, Brighton, Victoria.**

I write with response to your request for me to review the redacted report of Dr. Cameron Jones dated 24<sup>th</sup> October 2018 in which conclusions and recommendations by Dr. Jones were removed prior to my review. This was to permit me to draw my own conclusions and make my recommendations based on Dr. Jones' analysis and findings. I preface this letter with the following disclaimers:

1. This letter is written objectively
2. I have no previous private or business relationship with Dr. Damien Louis and Mr. Tony Gavan, other than assessments, review and reporting on property at 38 Black Street, Brighton, Victoria.
3. I am considered an industry expert in matters of biological hazards, biosafety and biocontainment.
4. No commentary on the structural integrity, current condition or building engineering is provided herein.

The following documents have been cited as part of this review:

1. *Letter from Heritage Victoria to Mr. Ian Pitt, dated 31/1/2018*
2. *Bryce Raworth Pty Ltd - 38 Black Street, Brighton, Revised methodology for the testing of brickwork in relation to mould, as required by Heritage Victoria through Permit P27984, dated 31/1/18, 2 August 2018*
3. *Dr. Cameron Jones of Biological Health Services "Microbiological Report Summary of Brick and Mortar and Wall Void Testing, dated 24<sup>th</sup> October 2018 and associated laboratory analysis and reports (706pp)*
4. *ANSI/IICRC S520 Standard and Reference Guide for Professional Mould Remediation*

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(2015) IICRC

5. *ANSI/IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration* (2015) IICRC
6. *Kemp, P., & Neumeister-Kemp, H. (2010). The Australian Mould Guidelines. Sydney NSW: Messenger Publishing.*

The assessment works undertaken by Dr. Cameron Jones of Biological Health Services appear to have been submitted and approved by Heritage Victoria. The method of testing followed is extensive and provides both external and internal wall cavity testing. From an Occupational Hygiene perspective and given the construction of the building is predominately double brick, this testing regime provides more than satisfactory cross-sectional testing opportunities. The testing of both external and internal individual brick surfaces is provided and allows for sound conclusions to be drawn on the penetration and absence/presence of microbial activity into the brick. This is important in terms of porous material that is potential biologically contaminated as it is common knowledge within the microbiological community that mould and bacteria have the ability to penetrate and colonise on internal pores/surfaces of porous material (IICRC S520, 2015). The sampling of the mortar and internal wall cavity allows for greater assessment of the extent of penetration/colonisation than just external testing which is always difficult in microbial assessments of the built environment as this required destructive testing.

The number and locations of individual bricks tested represents a seemingly representative yet random sample method which is important in scientific method. The number of sample bricks tested (n = 118; removed bricks, n= 108; control bricks, n = 10) is considered adequate for the purposes of this investigation and the size of the premises.

Dr. Jones used a surface swabs for purposes of determining microbial activity. The swab area of 10 x 10cm swab and method (100cm<sup>2</sup>) is industry standard in hygiene testing, food and beverage and pharmaceutical residue testing. Dr. Jones used various media plates to determine microbial speciation and colonization and this method provides viable spore counts using culture plates for surface swabbing and is as per industry and scientific standards. This method gives viable spore counts and does not include non-viable spores. Other industry methods commonly used give total spore counts (that is Impaction air sampling and tape lifts) however, Dr. Jones' methods are still commonly used. The colony counts, and speciation provided by the method adopted by Dr. Jones provides a good indicator of the mould/microbial activity within the premises and allows for better speciation using microscopy. This being said, total spore counts are the sum of viable and non-viable spores and therefore it can be assumed that any results reported by Dr. Jones would be understated and therefore potentially worse than reported levels and species.

Viable growth is reported in Colony Forming Units per 90mm plate (CFU/plate) which is once again industry standard practice. The level of CFU/plate is reported qualitatively against levels published in The Australia Mould Guidelines (AMG, 2010) which is commonly used in the restoration and remediation industries. It is important to note that whilst the *Australian Mould Guidelines* (AMG) is a well written document and provides a good overview of

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processes involved in mould inspections and remediation, it is only considered a guideline. The IICRC S500 and S520 are used as the accepted standards for property restoration and remediation within the Restoration Industry and used as the core text for IICRC training and certification of Inspection/Restoration technicians. Both the IICRC Standards and Australian Mould Guideline are used and referenced by most Occupational Hygienists and Indoor Environmental Professionals in Australia and Dr. Jones references these standards, particularly the AMG regularly throughout his reports.

Dr. Jones provides images within the report showing the presence of visible mould growth within the wall cavity and within the bricks themselves. Dr. Jones' further states within his cover letter that the brickwork and voids have been colonised by mould. The presence of viable (and most likely non-viable spores) would suggest presence of active microbial growth. From previous reports cited from 2017, it is known that the internal building fabric is heavily contaminated with mould of various species at high concentration and therefore it has spread to the interstitial wall void and brick work since.

The presence of commonly occurring black moulds (*Aspergillus* and *Penicillium*) as well as other mycotoxin producing moulds such as *Stachybotrys*, is evidence of actual mould growth within the brick work and wall cavity and these are all known to cause ill health effects (IICRC S520, 2015). Given the high to extremely high levels of viable microbial activity presented in Dr. Jones' report, it is safe to assume that there is great potential for future growth potential should the property be remediated. The external surfaces of the bricks showing high levels of microbial activity is expected due to the mould contamination within the internal fabric of the building and this would have only gotten worse since 2017. The most alarming data presented in Dr. Jones' report is the high levels of viable mould spores not only within the wall cavity and mortar but within the internal surfaces/structure of the bricks themselves further supporting the notion that future safe and successful remediation of the property is not possible. The consistency of species across that various test bricks also suggests that the mould contamination is widespread, and the presence of both primary and secondary colonising species supports the opinion that the premises has had long term moisture damage and the species present are consistent with previous assessments of the property. The presence of species such as *Stachybotrys* is of high concern as this species has been the subject of much media coverage (especially in the US) and has been known to cause ill health affects and death.

The general construction of the walls being rendered double brick construction when combined with the data presented in Dr. Jones' report suggest that the potential for future microbial growth and subsequent ill health affects are likely. This further supports the general opinion and that of the author that remediation is not possible. I would not be confident in suggesting that remediation is possible given the data presented and am of the opinion that this property presents a serious health risk.

Despite minor points noted above, Dr. Jones' sampling, testing and analysis methods are sound and within industry standards. His findings therein would therefore be valid. Dr. Jones' 2018 findings that the all the bricks tested, mortar joints and internal wall cavities at the property are

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highly biologically colonized and present a serious health risk. I share the same view. These conclusions are consistent with those found in historical assessments by multiple authors. Dr. Jones' most recent assessment of the property at 38 Black Street, Brighton and the results obtained from the sampling completed would have been a fair and factual assessment of the condition of the brickwork at the property and further supports conclusions drawn by other Hygiene Investigations at the property. It is my professional opinion that remediation of the property is unlikely to be able to be safely and successfully remediated and that the species present in the property and brickwork present a biological hazard. Given the serious risk to health the property poses, I would therefore recommend that the property be demolished paying attention to the hazards present and taking appropriate mitigation efforts to abate the risk to any persons entering or working on the property.

I am more than happy to discuss the content of my letter further should the need arise.

Yours sincerely,



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#### Brett Cole - Managing Director

- Bachelor of Science – Environmental Science (Monash University)
- Honours Degree of Bachelor of Science – Biological Sciences (Monash University)
- Master’s Degree in Occupational Hygiene and Toxicology (Edith Cowan University)
- Internationally Certified Bio-risk Management Professional (Certification Number – SOA692854) (IFBA – International Federation of Biosafety Associations)
- Certified Methamphetamine Testing Agent (Jena Dyco International)
- Certified Water Damage and Building Microbial Technician (Cert. No 50297) (IICRC - Jena Dyco International)
- Certified Applied Microbial Inspection (Cert. No 50297) (IICRC - Jena Dyco International)
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