



**AALBORG UNIVERSITY**  
DENMARK

**Aalborg Universitet**

## **Fungal biodiversity in buildings and how to detect it**

Andersen, Birgitte; Bastholm, Camilla Jul

*Creative Commons License*  
Other

*Publication date:*  
2022

*Document Version*  
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

*Citation for published version (APA):*  
Andersen, B., & Bastholm, C. J. (2022). *Fungal biodiversity in buildings and how to detect it*. Abstract from BMS Annual Conference, Cranfield, United Kingdom.

### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal -

### **Take down policy**

If you believe that this document breaches copyright please contact us at [vbn@aub.aau.dk](mailto:vbn@aub.aau.dk) providing details, and we will remove access to the work immediately and investigate your claim.

# British Mycological Society 125<sup>th</sup> Anniversary Conference

## Fungi and the Environment

### Abstract Submission

Do you prefer to deliver a talk or a poster? (Mark with an X)		Which Conference session is your submission focused on? (Mark with an X)	
<input checked="" type="checkbox"/>	Oral talk	<input checked="" type="checkbox"/>	1. Fungi in the built environment
<input type="checkbox"/>	Poster	<input type="checkbox"/>	2. Fungi in the human environment
		<input type="checkbox"/>	3. Fungi in the industrial/technological environment
		<input type="checkbox"/>	4. Fungi in the natural environment
		<input type="checkbox"/>	5. Climate change and interactions with fungi

### Fungal biodiversity in buildings and how to detect it

Birgitte Andersen<sup>1\*</sup> and Camilla Jul Bastholm<sup>2</sup>

<sup>1</sup> BUILD, Aalborg University, AC Meyers Vænge 15, DK-2450 Copenhagen SV, Denmark

<sup>2</sup> Royal Danish Academy, Philip de Langes Allé 10, DK-1435 Copenhagen K, Denmark

\*Presenter: Birgitte Andersen, [bian@build.aau.dk](mailto:bian@build.aau.dk)

The fungal species that can be found in a building depend on both the building materials used for the construction and the level of moisture in the materials. In a water damaged building, the fungal growth is often visible and can be detected and identified using culture based methods, such as V8 contact plates. In modern building containing gypsum wallboard and OSB board, water damage often result in growth of *Chaetomium globosum* and *Stachybotrys chartarum*. In older buildings of brick and mortar, *Penicillium chrysogenum* and *Aspergillus versicolor* are normally found after water damage. In buildings with prolonged high humidity, fungal growth is not always obvious, and settled dust and aggressive air sampling have to be used. Two different media (e.g. V8 and DG18) are recommended if culture based methods are used, but DNA sequencing and Mycometer analyses of dust and air samples are increasingly used by professional building surveyors. *Aspergillus domesticus*, *Debaryomyces hansenii*, *P. brevicompactum* and *Wallemia muriae* are common in dust and air samples and seem to be good indicators for elevated humidity levels and potential indoor problems. Opening the building constructions, i.e. drilling holes in walls, ceilings or floors, is often done, when surveyors are looking for hidden fungal growth. A new study showed that DNA sequencing of dust from vacuum-cleaners can be used as a non-destruction screening tool. In other cases traditional methods are not enough to expose the extent of the problem. In a Danish museum repository where the staff had severe health problems, the fungus, *A. halophilicus*, was first detected when aggressive air sampling was combined with the use of malt-yeast-50%-glucose agar (MY50G) [Bastholm et al. (2022). Journal of Cultural Heritage. <https://doi.org/10.1016/j.culher.2022.02.009>].

