

Breathing City

Future Urban Ventilation Network

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The Leeds
Teaching Hospitals
NHS Trust

Foster + Partners



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Prof. Janet Barlow



Prof. Malcolm Cook



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van Reeuwijk



Dr. Omduth
Coceal



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Dr. Megan
Davies Wykes



Dr. Abigail Hathway



Dr. Zheng-Tong Xie



Dr. Andrew Timmins



Dr. Helen Freeman

Breathing City

Future Urban Ventilation Network

Drivers

- Understanding airflow is key to understanding and mitigating poor air quality
 - Link between pollution sources and exposure
 - Need to be able to interpret measurements
- Physics of indoor- outdoor flows is technically challenging
 - Urban and indoor flows both matter
 - Complex and at different time and length scales
- Multiple factors including energy, comfort, noise, climate alongside air quality
- Ventilation doesn't consider health or behaviour effectively
- Building ventilation is not connected with city design – huge legacy infrastructure that is not fit for purpose

Objectives

Bringing people together across disciplines to:

- **Scope** the Breathing City framework – how do we integrate health evidenced flow design?
- **Define** and initiate new research to model flows, pollutant transport and exposure risks
- **Build** partnerships, drive technology solutions, enable user engagement
- **Identify** the policy requirements to enable health-based ventilation design

Theme 1 – Coupled indoor–outdoor environments

Theme Leads: Malcolm Cook and Maarten van Reeuwijk
Consider mechanisms for ingress and egress of pollutants in buildings and the techniques for quantifying this exchange

Theme 2 – Health-centred ventilation design

Theme Leads: Abigail Hathway and Henry Burridge
Explore innovations required to deliver good ventilation for occupant health

Theme 3 – Breathing City into practice

Theme Lead: Tim Sharpe
Identify and engage with potential users at different scales to inform cohesive strategies for informed policy

Events

- **Policy event at Westminster with Healthy Buildings APPG and HEMAC** Thursday 30th September
- **Metrics for Indoor and Outdoor Air Quality** Wednesday 22nd September
- **Perspectives on Ventilation and Air Quality Modelling** (theme 1) Tuesday 14th September
- **Several theme-led workshops throughout the summer**
- **Clean Air Day** (with other SPF networks) Thursday 17th June
- **Seminar Series** (April 2021 – July 2021) and (October 2021 – February 2022)
- **Network Launch Event** Monday 18th January
- We have recordings of all past events on our [YouTube channel](#).

Surveys



Theme 2 Survey: Impact of Ventilation on Energy, Comfort and Air Quality

To understand what professionals working the field consider typical ventilation provision in a range of settings, and the resulting impact on energy, comfort and air quality. Through this we hope to understand where there is consensus amongst experts, and areas of uncertainty assisting the direction of future work in this field.
Live



Repository Survey: Drafting a Breathing City Open Repository

To collect comments/suggestions for the draft Open Repository of the Future Urban Ventilation Network.
Live



Theme 3 Survey: Public Attitude and Awareness of Ventilation and Air Quality

To gain a national picture of ventilation awareness and behaviour.
Coming soon

Seed corn funding

Four researchers have received a share of £20,000:

- 'Real-time residential monitoring of children with suspected pollution related respiratory diseases'. PI Dr. Jonny Higham. University of Liverpool
- 'Ventilation, indoor air quality and people health in care homes'. PI Dr. Hong Yang. University of Reading
- 'Not every air quality measurement should be treated the same: standardising visuals'. PI Dr. Marco-Felipe King. University of Leeds
- 'Impact of different building standards on indoor air quality in homes'. PI Dr. Monica Mateo-Garcia. Birmingham City University

Reporting



Network Scoping Document



A paradigm shift to combat indoor respiratory infection (Author list includes Noakes)



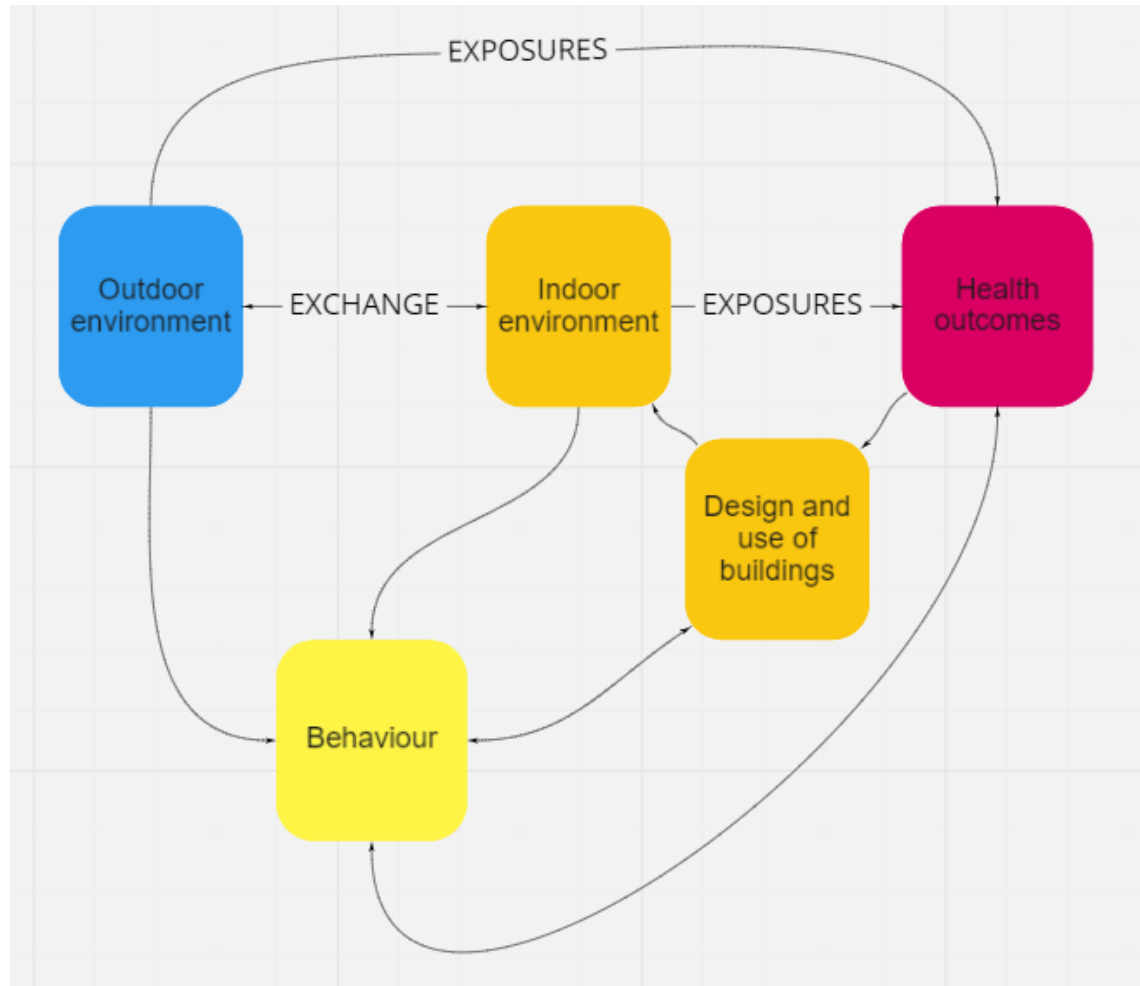
Infection Resilient Environments: Buildings that keep us healthy and safe (Author list includes Noakes)



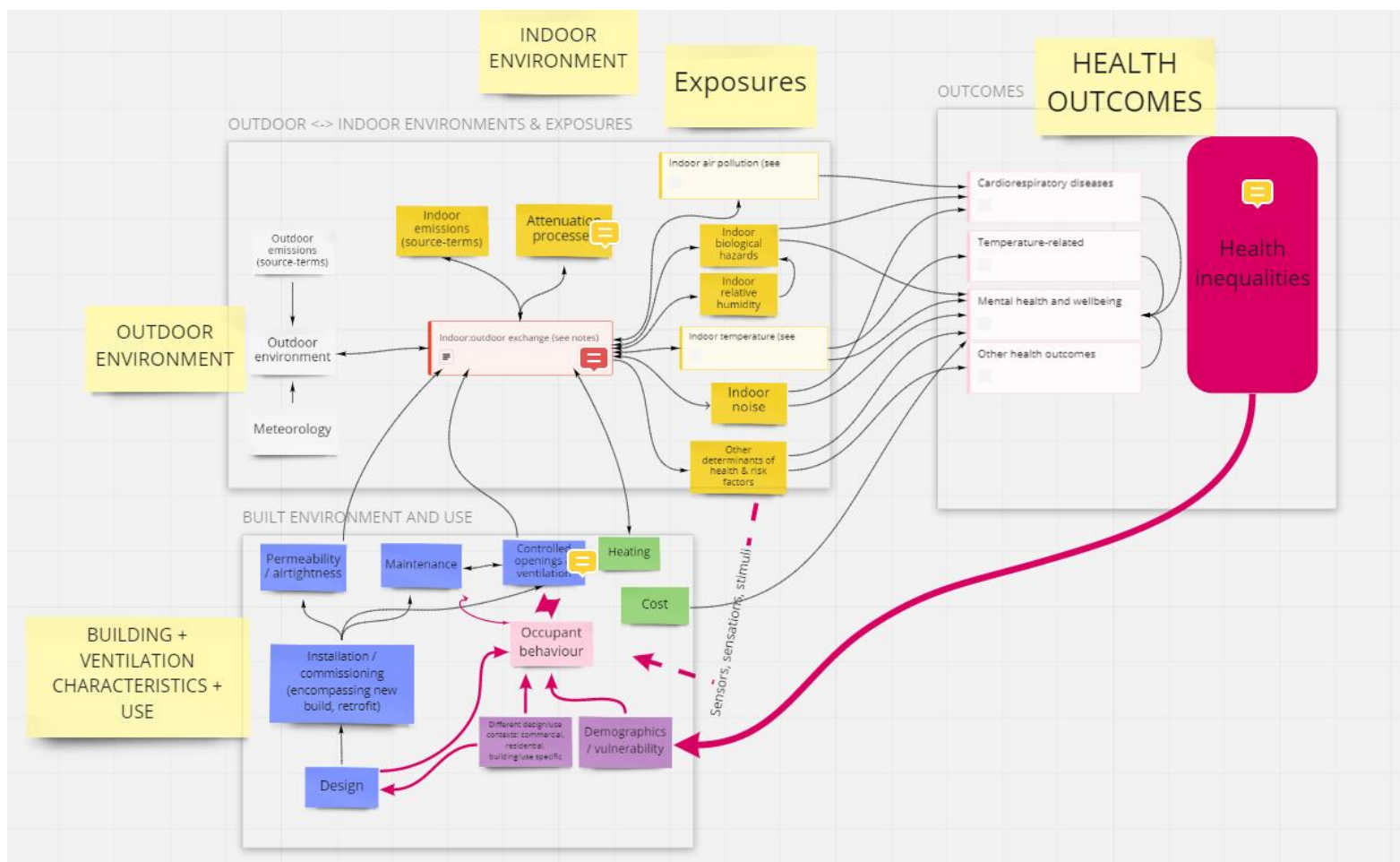
Website blog posts



System map approach



System map approach



Contact details

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This project is funded as part of the Clean Air SPF programme which is led by the Natural Environment Research Council (NERC) and the Met Office, with the Engineering & Physical Sciences Research Council (EPSRC), the Economic & Social Research Council (ESRC), Innovate UK, the Medical Research Council (MRC), the Science and Technology Facilities Council (STFC), the National Physical Laboratory (NPL) and Defra.