

INHABIT: Indoor Habitability during the transition to Net Zero Housing

Ruth Doherty (University of Edinburgh)
on behalf of the INHABIT Hub Team

Transdisciplinary Team with Geographical Representation

Health and Social
Sciences, Built and
Natural Environment

42 Diverse Partners

10 Universities

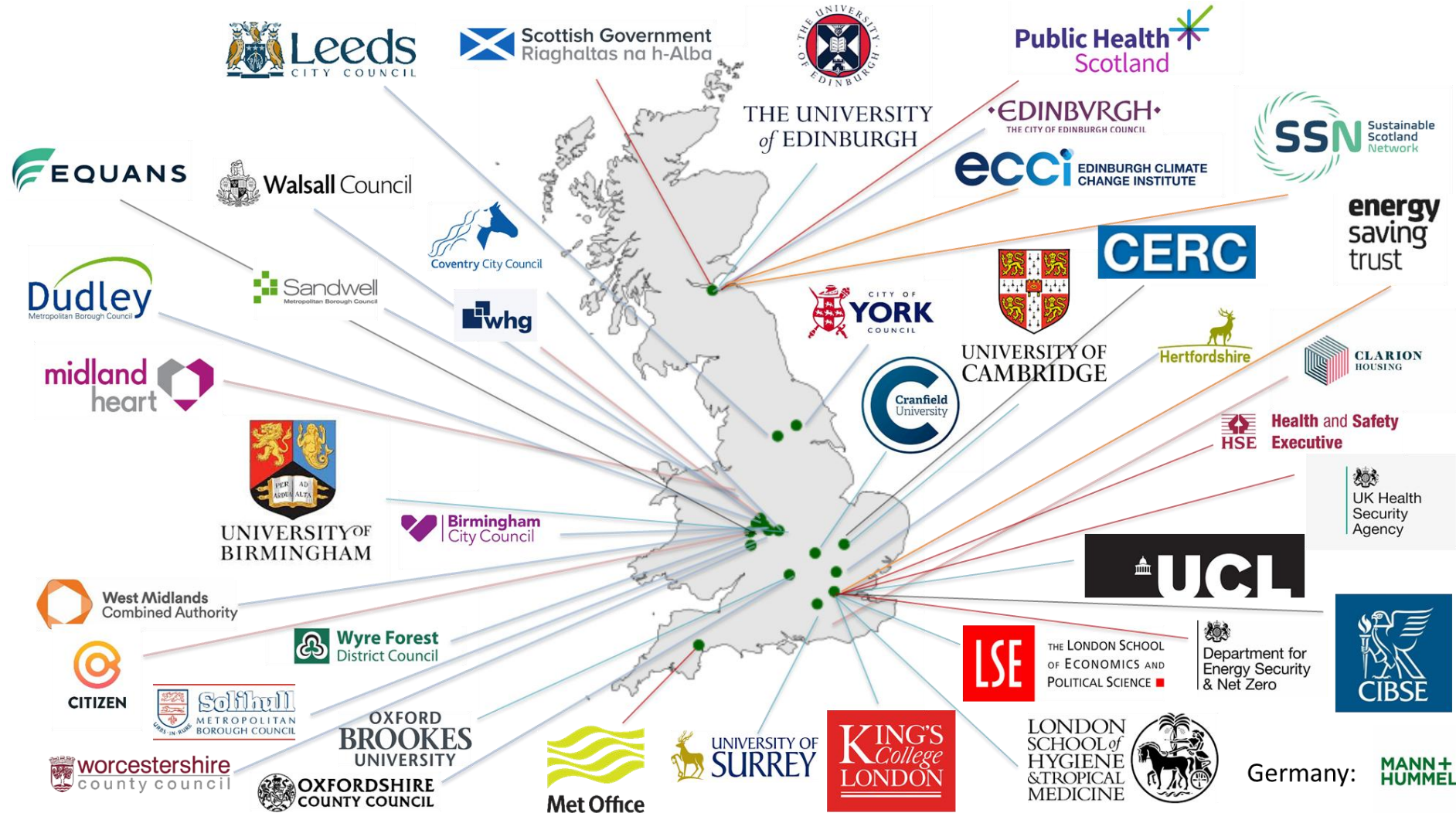
14 Local authorities

6 Government-related

4 Housing associations

4 Industrial partners

4 NGOs



Net Zero Housing challenge



Energy retrofit



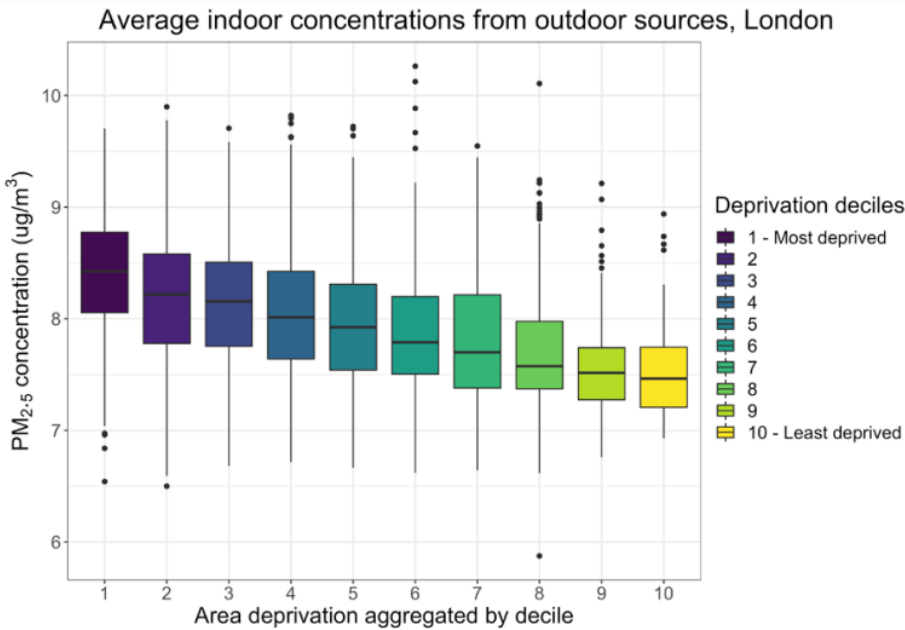
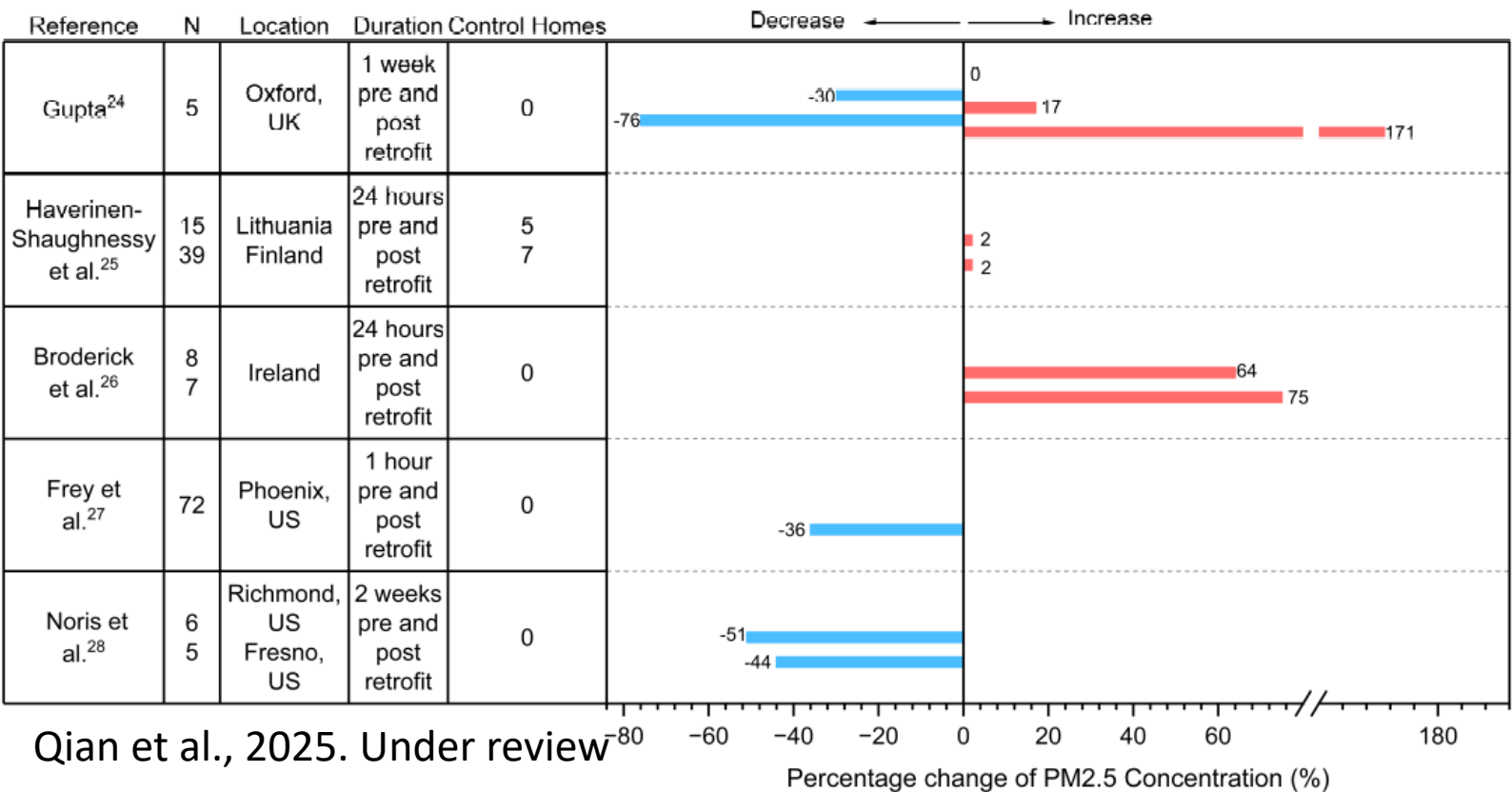
Passivhaus principles



UK Government target: **NZ GHG emissions** by 2050

- Housing sector – 25% GHG emissions
- UK homes are not fit for future
- **Large-scale energy retrofits needed**
- **Impact on the indoor environment?**

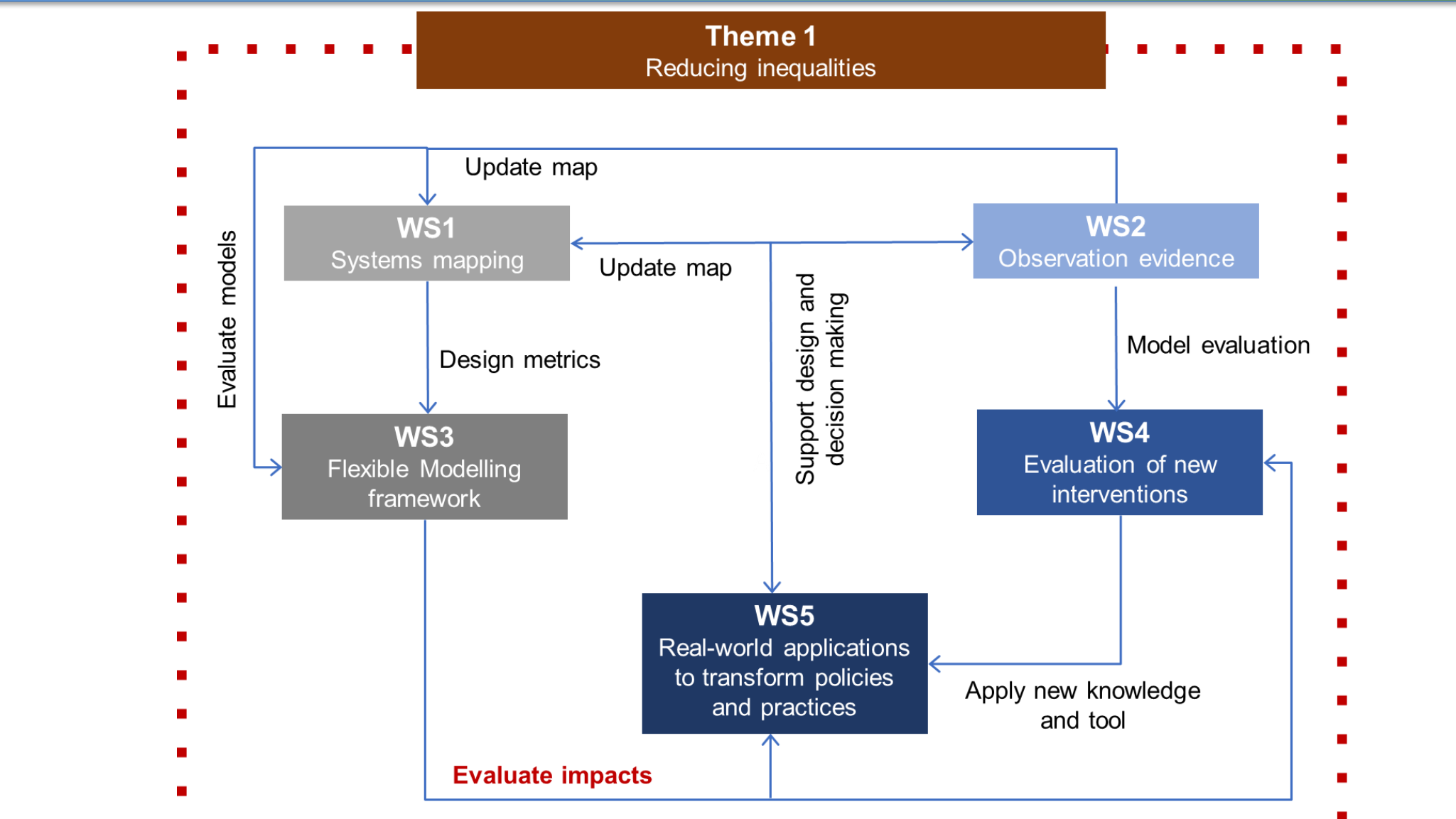
Energy retrofit: impacts on indoor environment, health and inequalities



Ferguson et al. (2021) <https://doi.org/10.5334/bc.100>

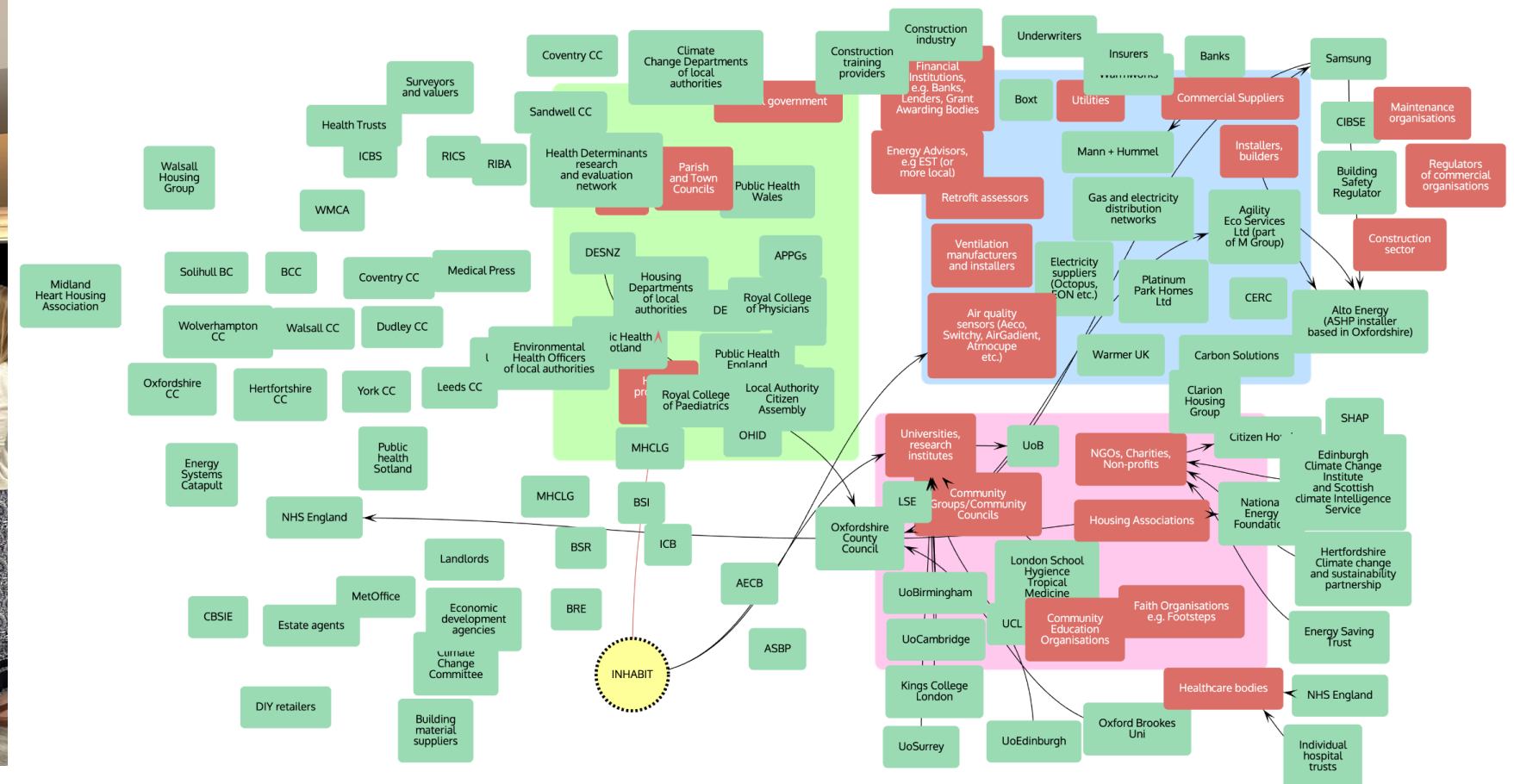
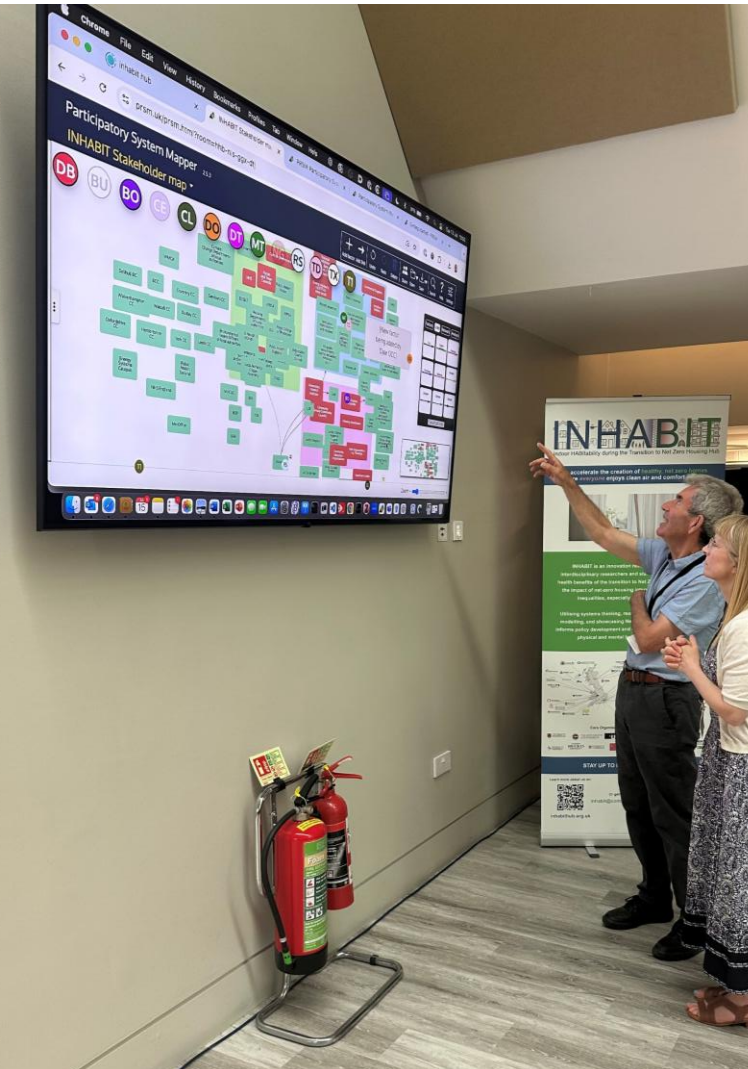
Climate mitigation with Health and Inequalities focus

Our Approach



Progress: Stakeholder mapping

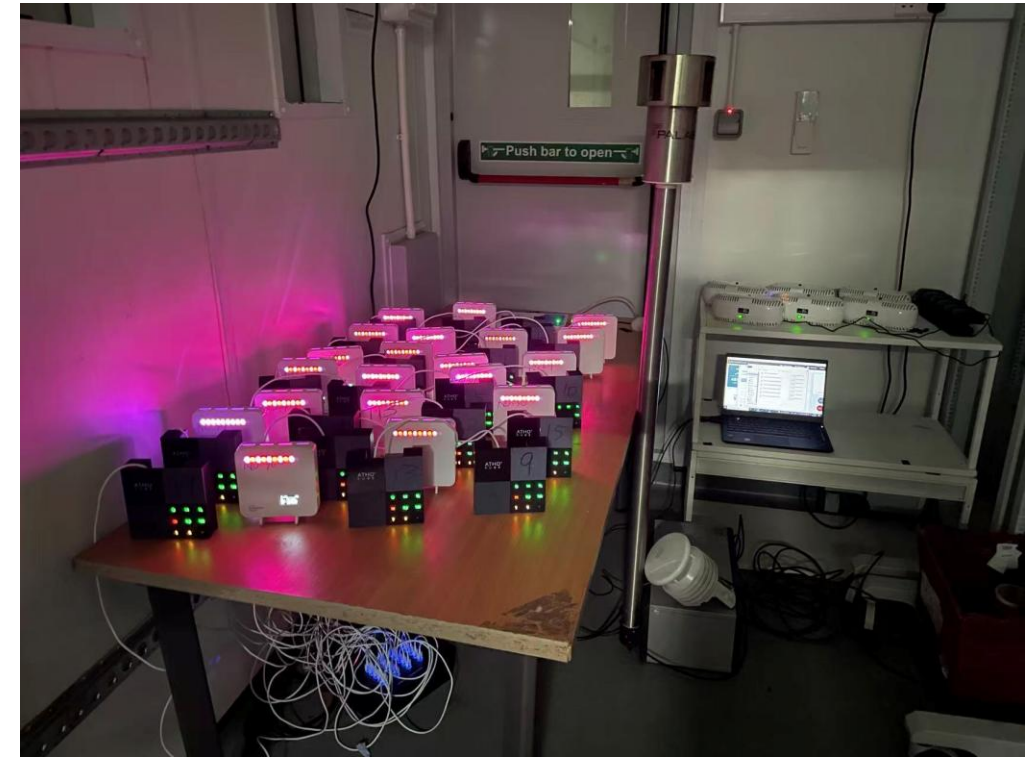
WS1: Systems thinking:



Research progress: monitoring

WS2: Real-world measurements:

- 200+ control and retrofit homes; N-RCT
- Indoor air pollutants, T&Q, bioaerosols, Damp and mould, EPC
- Surveys e.g. St George's Respiratory Questionnaire, Short Warwick-Edinburgh Mental Well-being Scale
- Homes in the West Midlands and Oxfordshire



WS5: Real-world applications with our partners

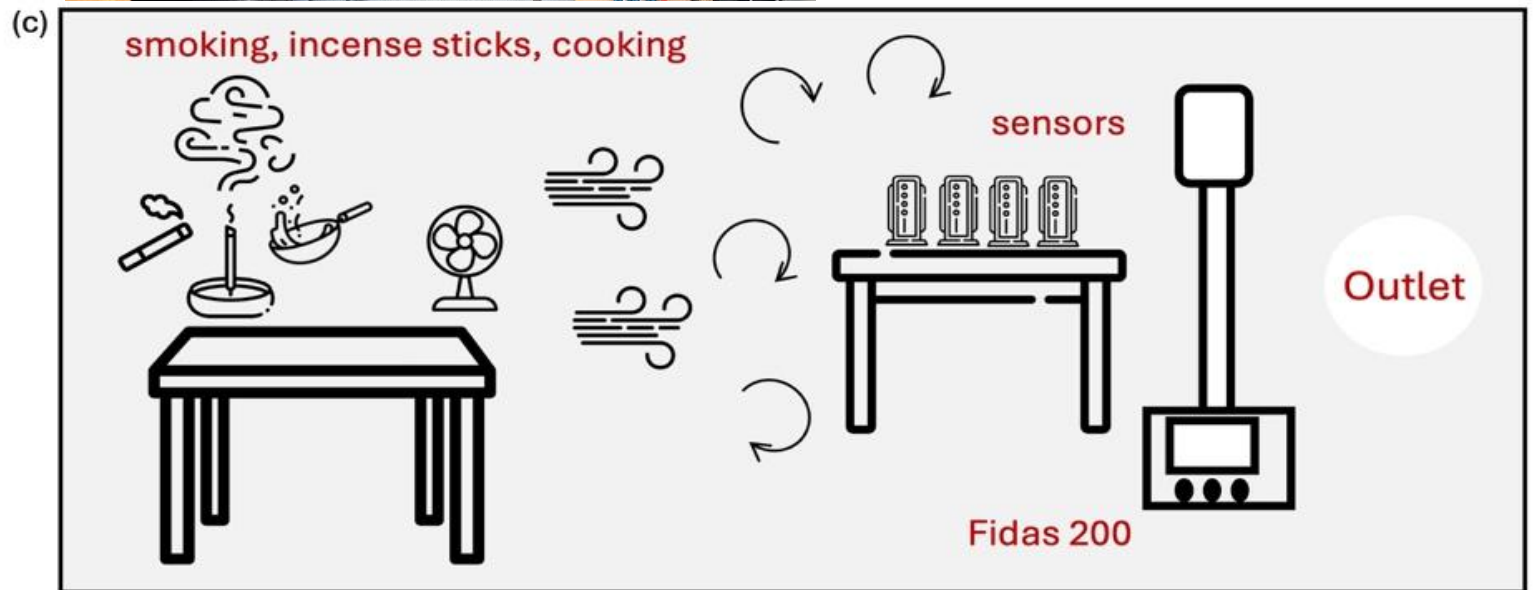
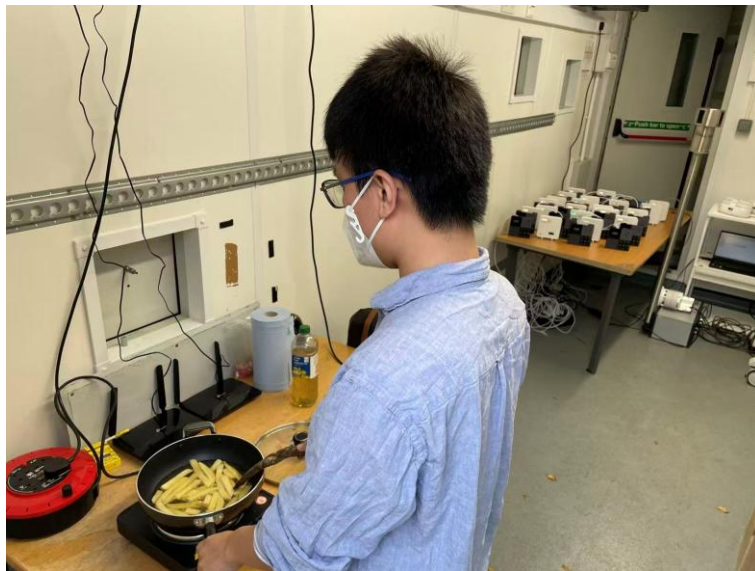
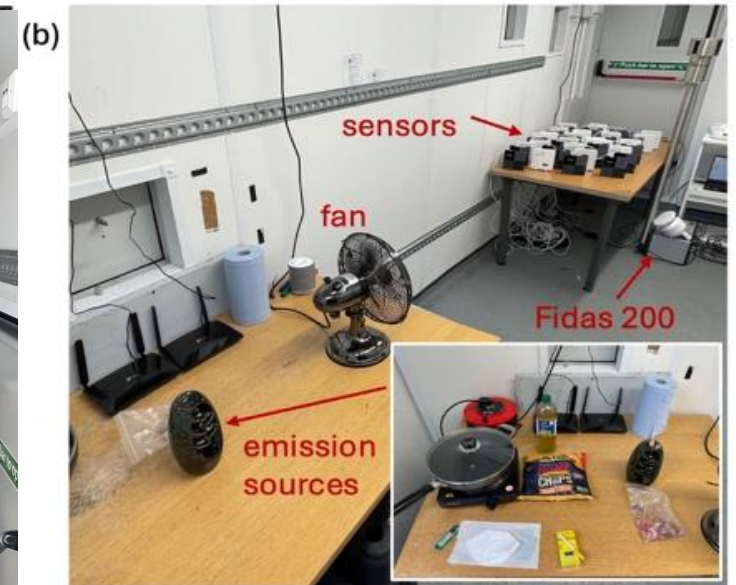
- May extend depending on **resources/ethics** ...

**Net Zero
Neighbourhoods**

Designed by citizens, for the places they live in.



Monitor calibration (~100 sensors)



Thank you for listening



Get involved and stay connected:

Email: inhabit@contacts.bham.ac.uk

Website: inhabithub.org.uk

LinkedIn: linkedin.com/company/inhabit-hub/



UK Research
and Innovation

NIHR
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Health and Care Research



Medical
Research
Council



Engineering and
Physical Sciences
Research Council



Natural
Environment
Research Council



National Hub on Net Zero, Health and Extreme Heat

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on behalf of the HEARTH Hub Team

Funded by:

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Council



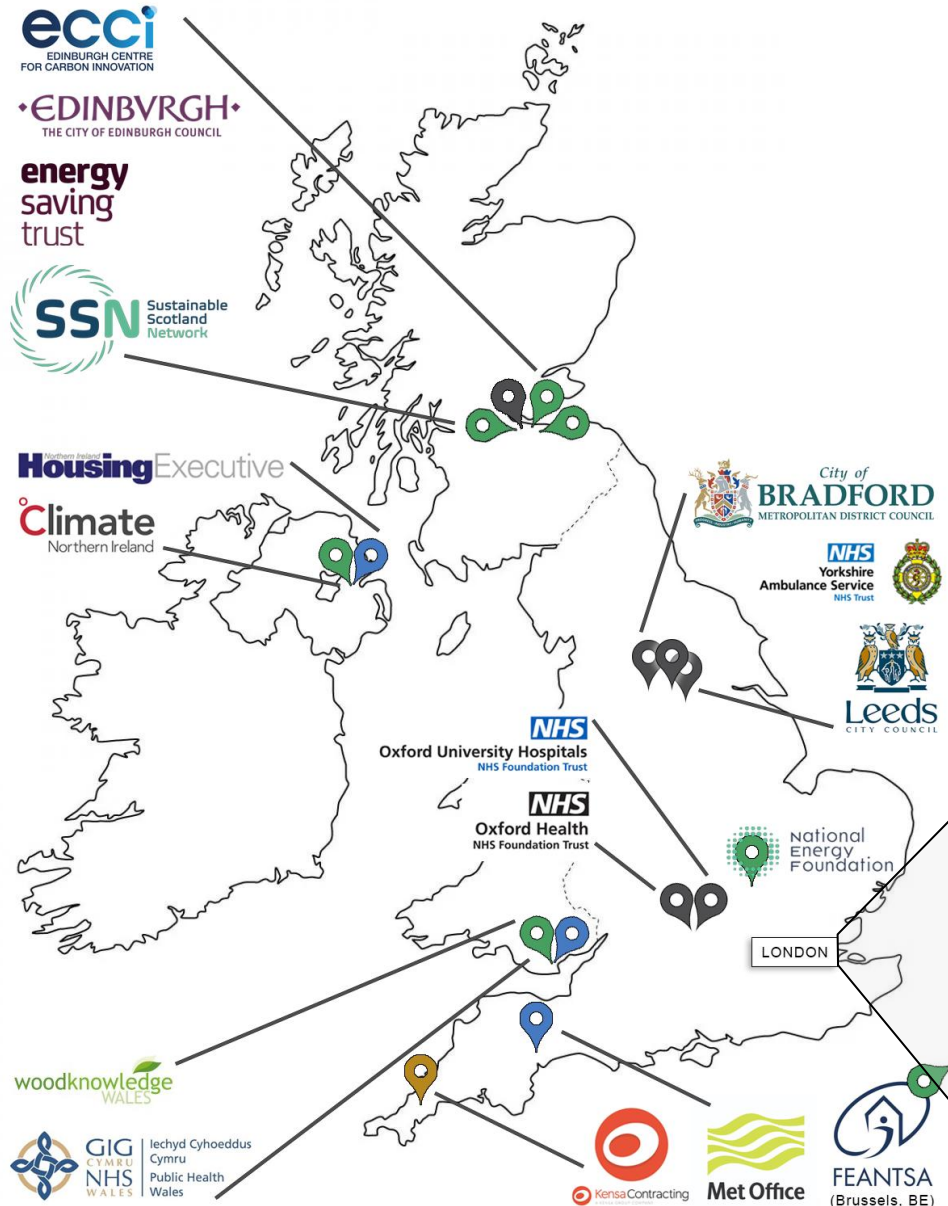
Natural
Environment
Research Council

Overview of HEARTH

- 'Extreme weather' ~ **heat extremes** and co-occurring events.
- Ten core funded partners (Academic institutions, Public sector bodies)
- **Vision:** Assess and realise the **health co-benefits** of the **net zero transition** and the **reduction in health risks**, associated with **extreme heat** for **vulnerable communities**, for whom **evidence is lacking**.
- Focus on interventions in the **built and natural environment** of **high-risk settings (homes, care settings, prisons, hospitals)** affected by net zero policies and related health co-benefits.
- Inclusive **transdisciplinary** whole systems approach.
- **Co-production** of novel evidence-based **knowledge**, evaluation **frameworks**, and actionable, high-impact **solutions**.



HEARTH Consortium



Six academic partners: world leading expertise

Climate, Net Zero transition, Built and outdoor environment, Social Science Epidemiology, Health impact modelling, Climate Economics and Policy, and Mental Health

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UNIVERSITY



THE UNIVERSITY
of EDINBURGH



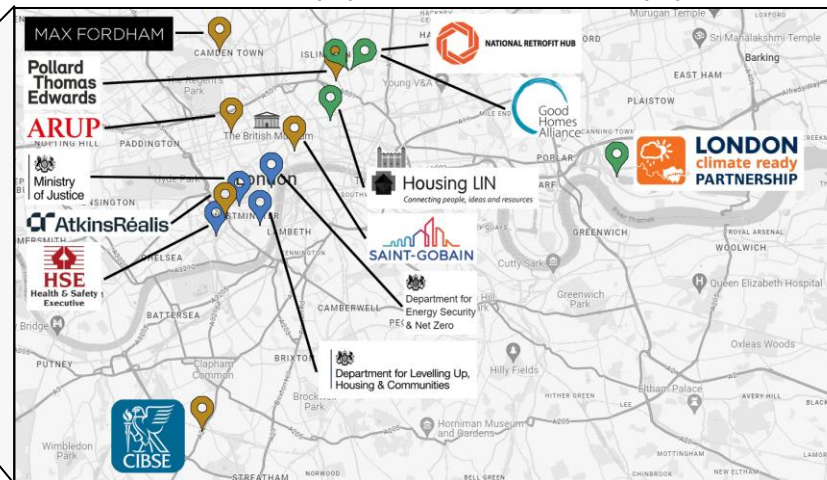
Four funded public sector co-applicants

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Six international researchers

- **International:** USA (Harvard, Arizona), Australia (UNSW), India, and Netherlands
- **National partners representing all UK nations** from National Government (7), public sector (6), third sector (12) and industry (7)



- National Government partners
- Third sector partners
- Public sector partners
- Industry partners

Progress

- Kick-off meeting, 13 March 2025
- In-person launch event / Advisory Board / Annual Assembly in Oxford Brookes University (6-7 May 2025)
- Stakeholder Mapping
- Three stakeholder workshops on building heat resilience in homes, prisons and hospitals
- Meeting with PPIE group
- Ethics approval (Institutional, NHS, NRC)

www.hearth.ac.uk

