

Health Benefits from Energy Efficiency Housing Improvements

The WHY and the HOW

19 Nov 2026 [Online]

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

FUNDED BY NIHR | National Institute for Health and Care Research

CoSine Public Involvement





Debs Hameed Megan Samina

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Housing and health in the green transition: What London residents told us

Samina Begum, Hameed Khan, Megan Leach, Debs Smith, and Jakob Petersen



Background

A green transition is needed to deal with climate change. Upgrading hous transition could bring multiple benefits – from improved energy security t emission. It may also improve health and reduce inequalities, particularly upgraded with energy efficiency measures.

Our new study, CoSine: Co-benefits in health from Sustainable housing, needs could change as homes are upgraded to become more energy eff housing upgrades and the healthcare system in London, UK. We are als will be directly affected by these changes at different types of events.

To start, we held a workshop with residents from low-income households homes. Eleven participants from across housing tenures took part in a tw

- How housing affects health
- Which groups struggle to access government upgrade schemes

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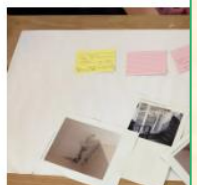


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ENERGY POVERTY RESE

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Housing Renovation & Health: Listening to Lived Experience

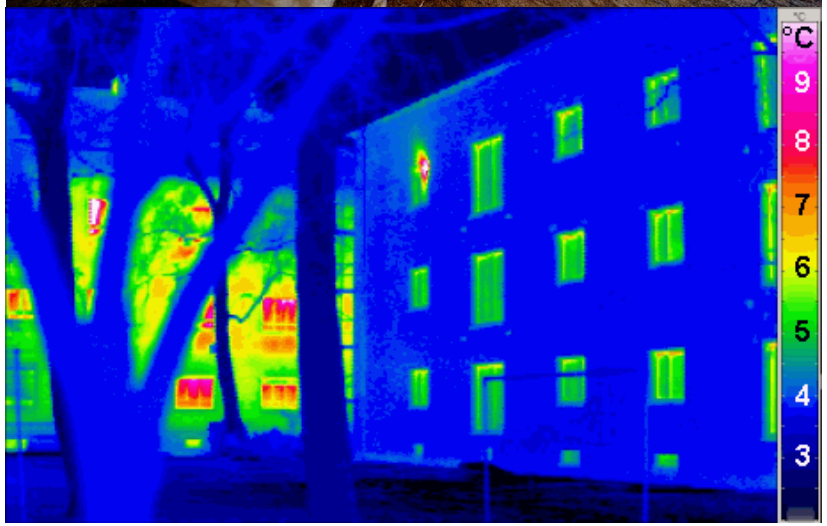


Background

us started, we held two workshops in London. The first was for people

Energy Efficiency Renovation





INTERVENTION

- Wall and loft insulation
- Solar panels
- Energy-efficient lighting
- Low carbon heating
- Energy-efficient doors/windows
- Boiler upgrade

POPULATION

- Private rental sector tenants
- Homeowners

Poor quality housing makes people ill: It's complex

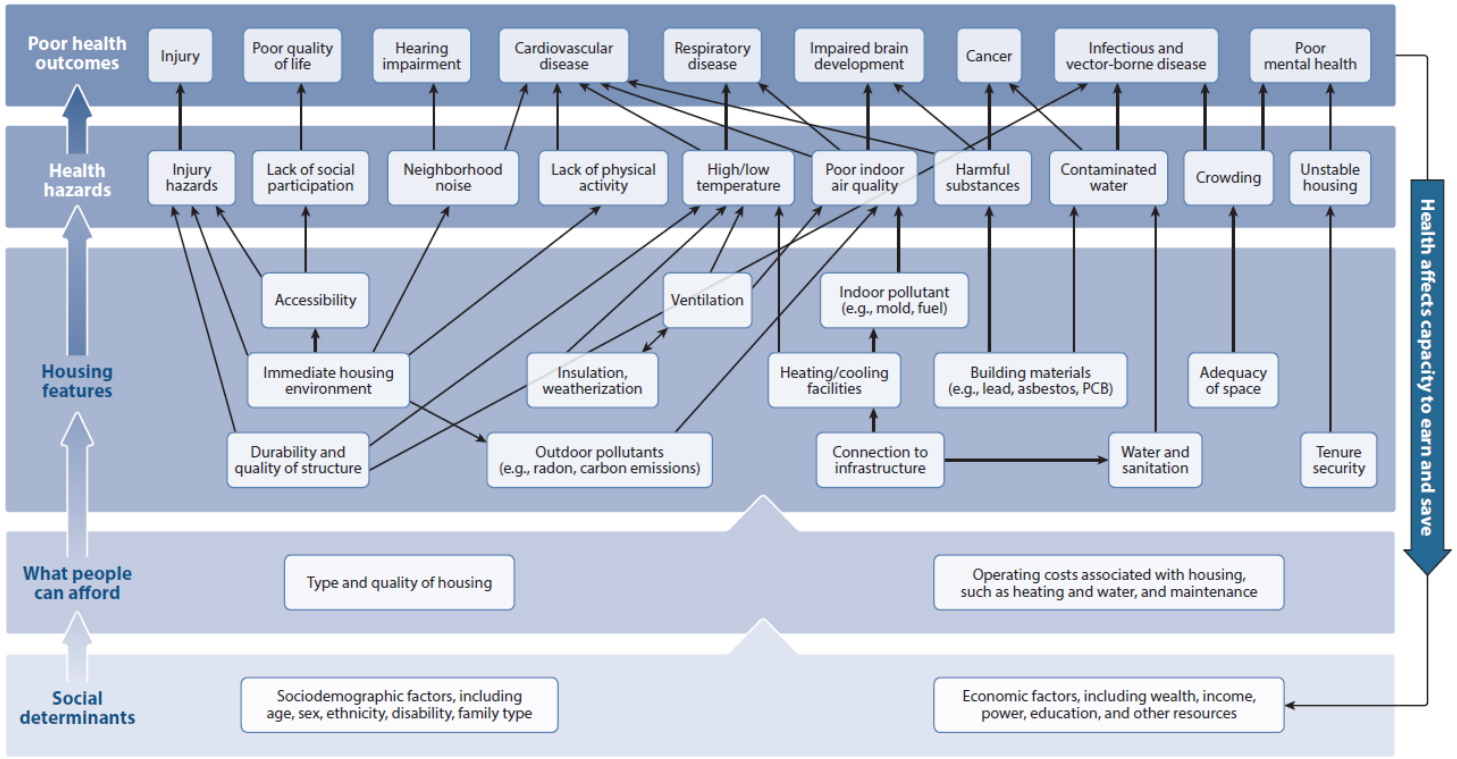


Figure 1

Housing pathways to health. Abbreviation: PCB, polychlorinated biphenyls.

Howden-Chapman et al. 2023; Maslow 1943

Poor quality housing makes people ill: It's complex

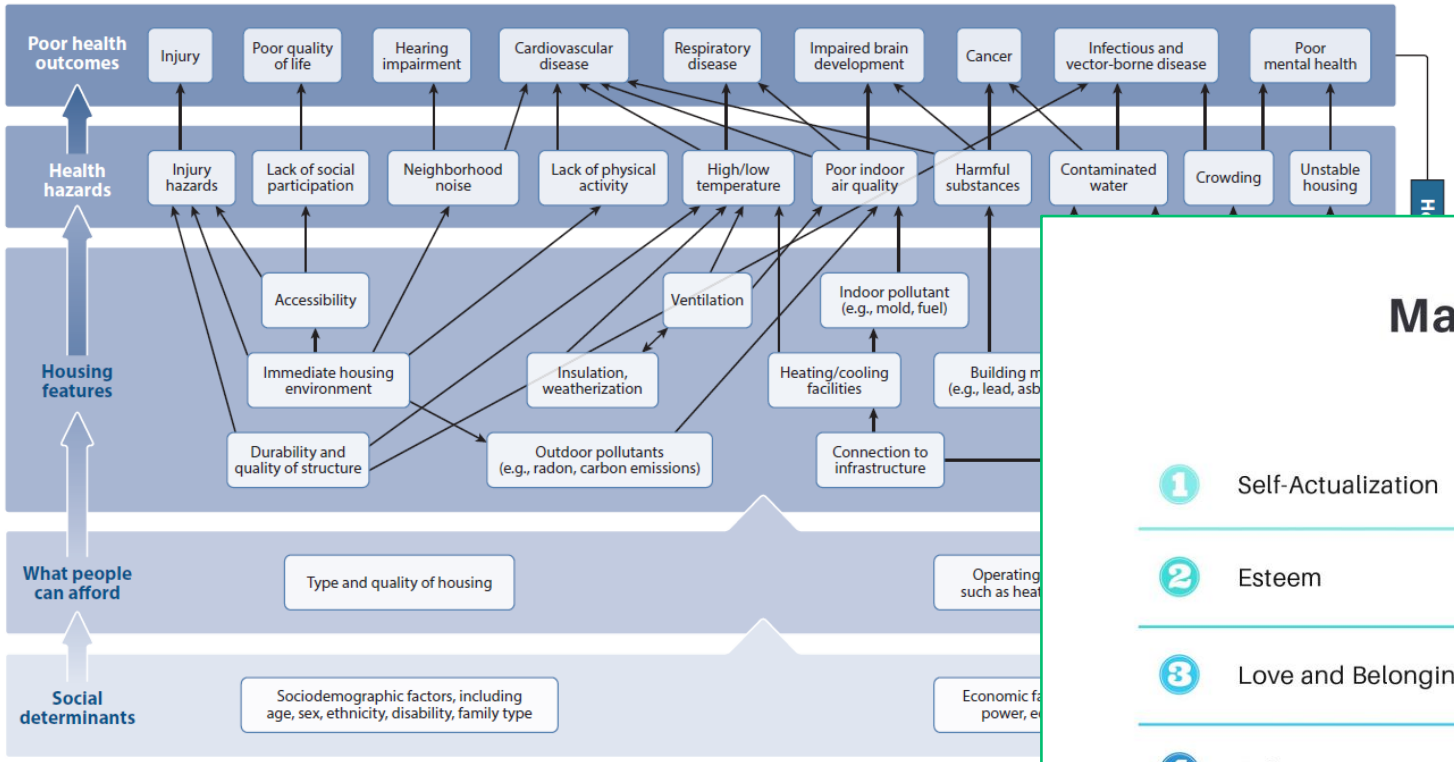
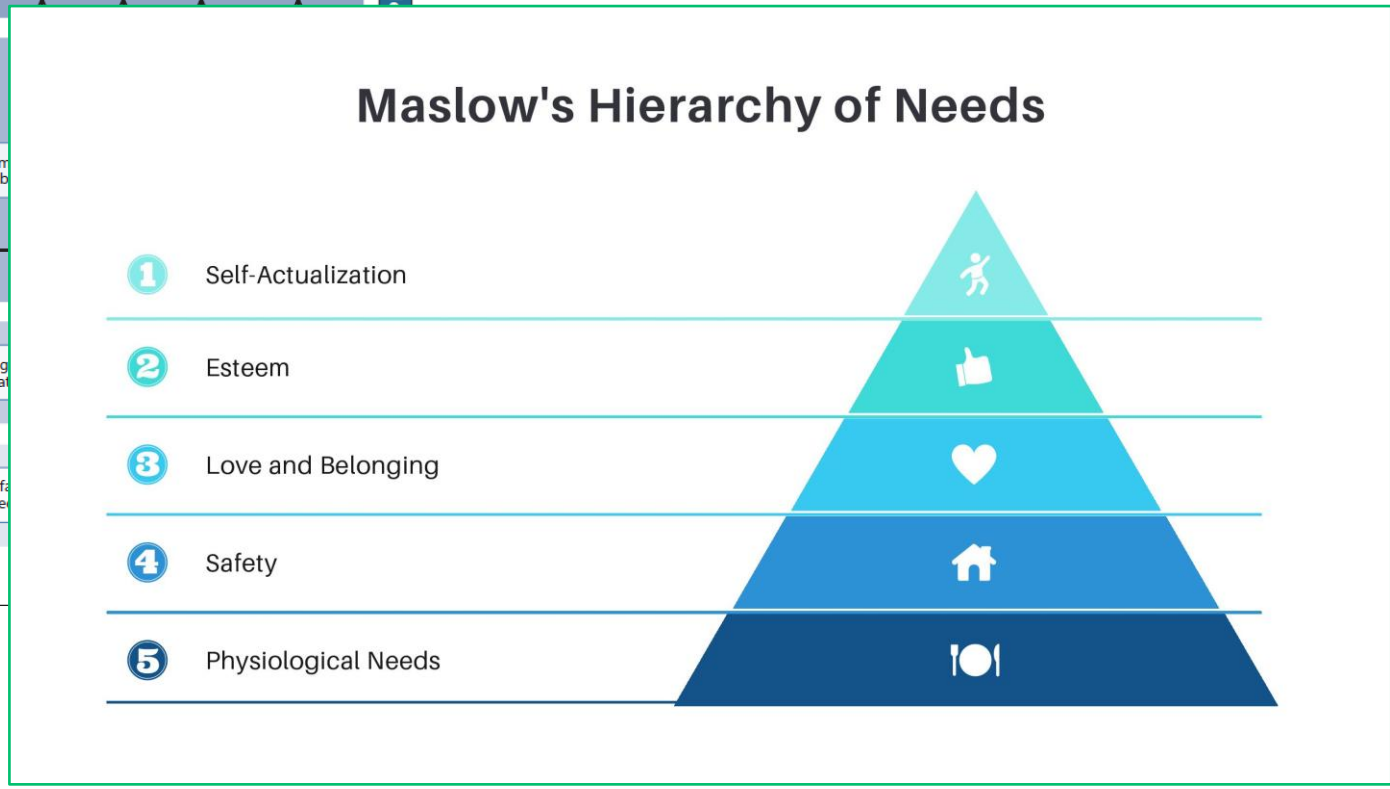


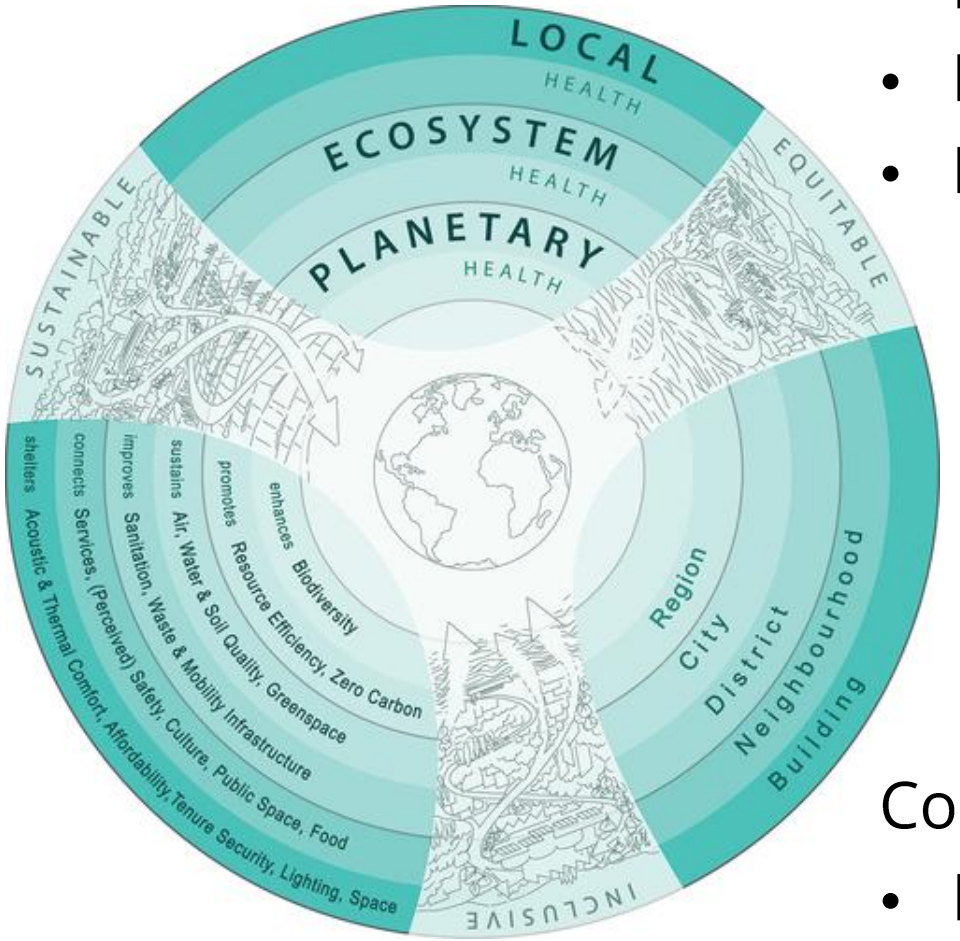
Figure 1

Housing pathways to health. Abbreviation: PCB, polychlorinated biphenyls.



Howden-Chapman et al. 2023; Maslow 1943

Unsustainable housing is bad for people & planet



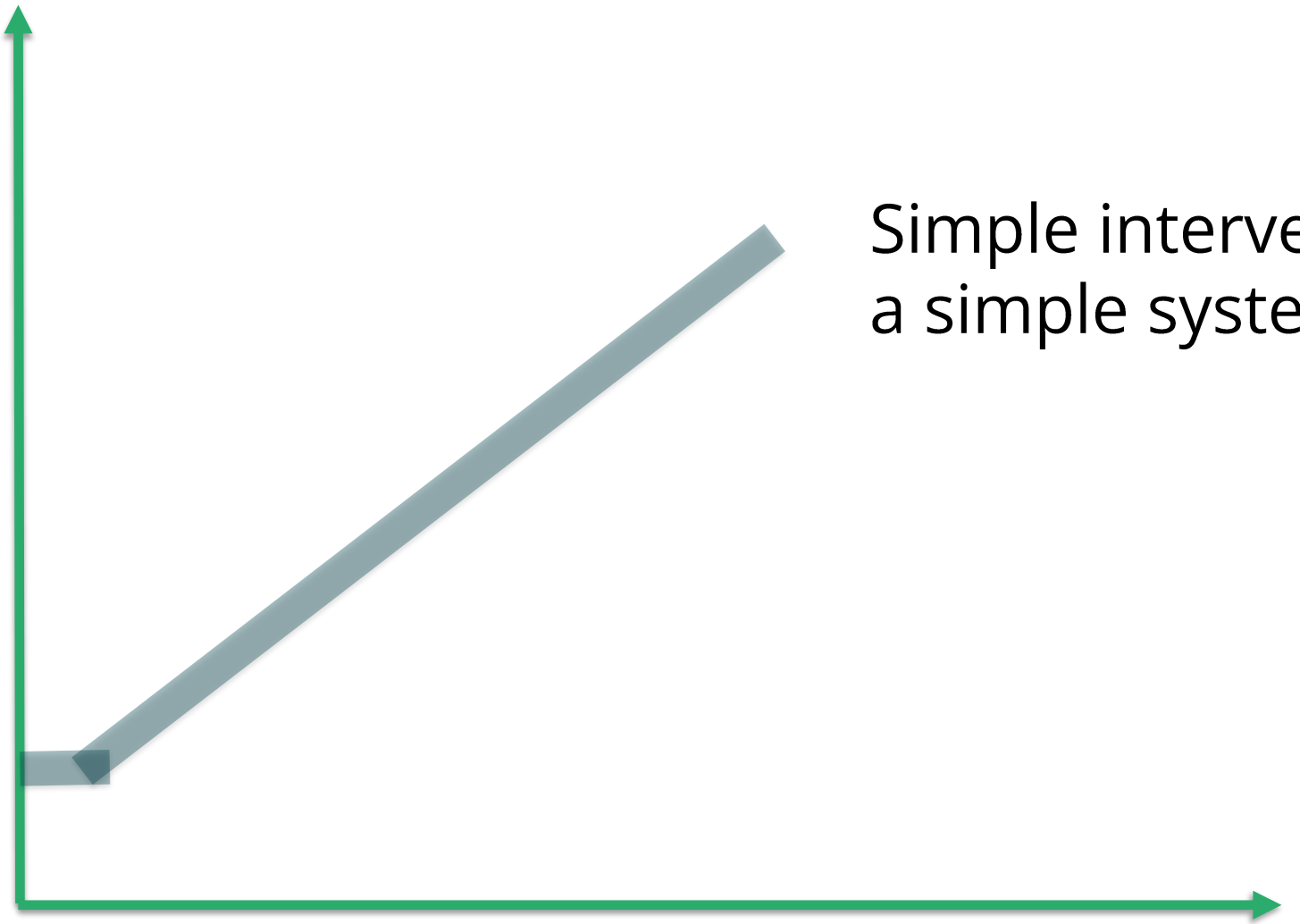
- Planetary health
- Ecosystem health
- Local health
  - Neighbourhood: connects people with services (employment, education, retail, leisure, healthcare), perceived/actual safety, culture, public space, food
  - **Buildings: shelter people with acoustic/thermal comfort, affordability, tenure security, lighting, space**

Core principles for the transition

- Inclusion / Equity / Sustainability

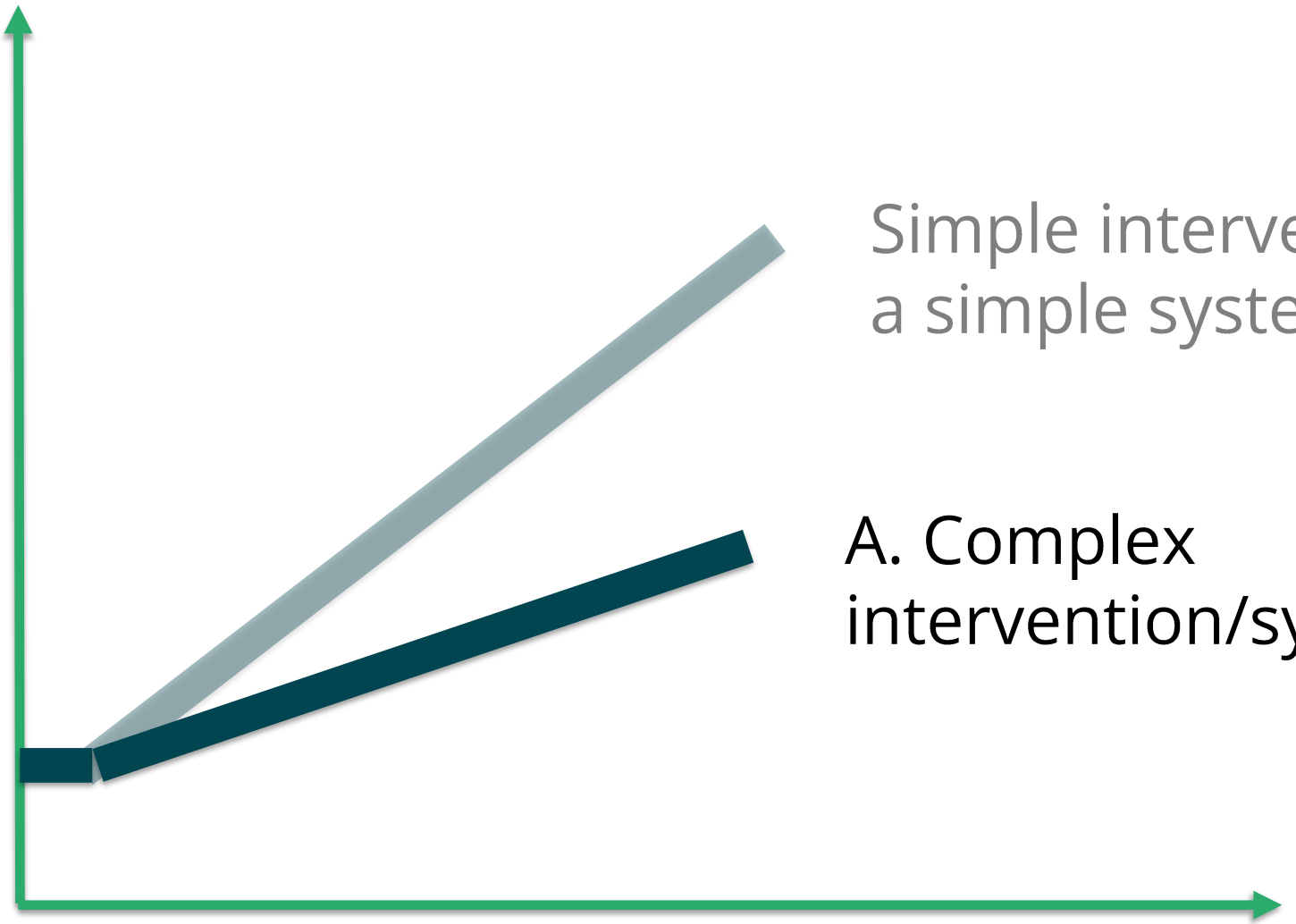
Pineo 2022

Is the whole greater than the sum of its parts?

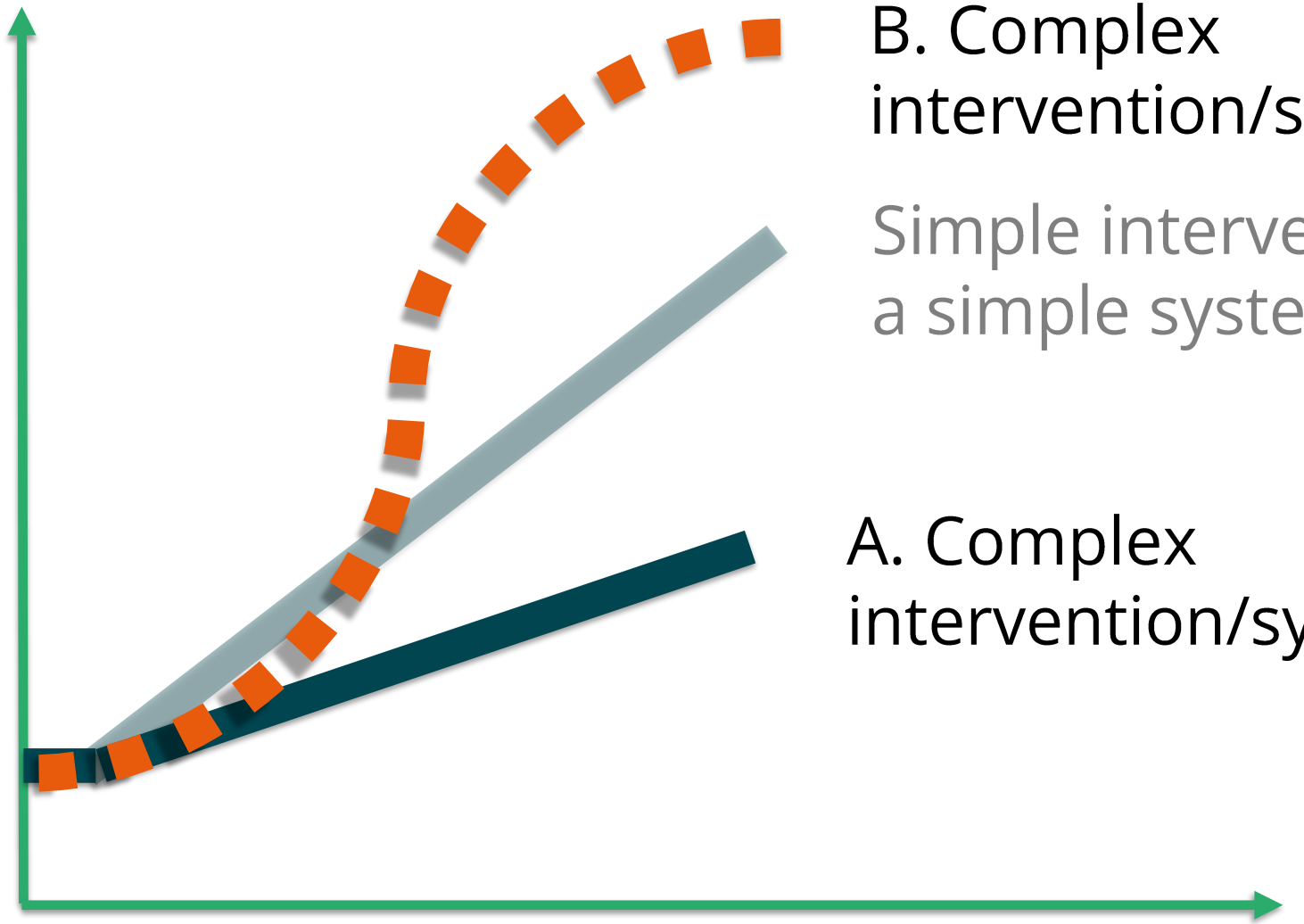


Simple intervention in a simple system

Is the whole greater than the sum of its parts?

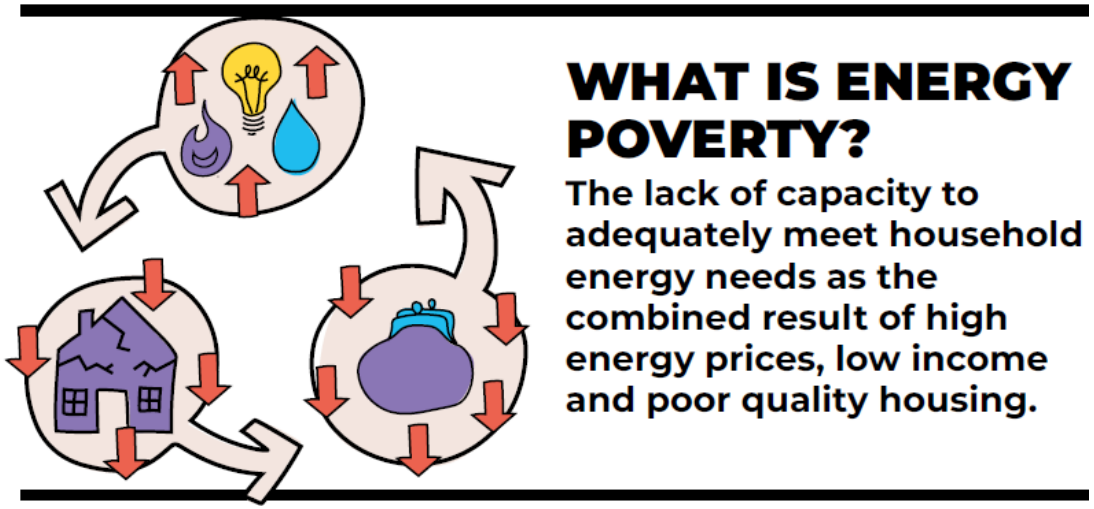


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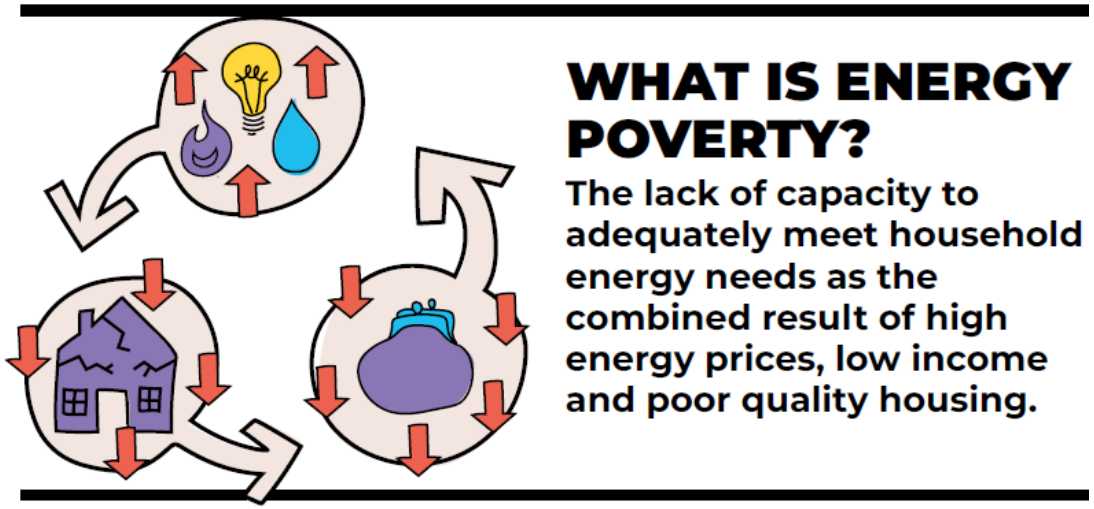
Downward and upward loops

DOWNWARD

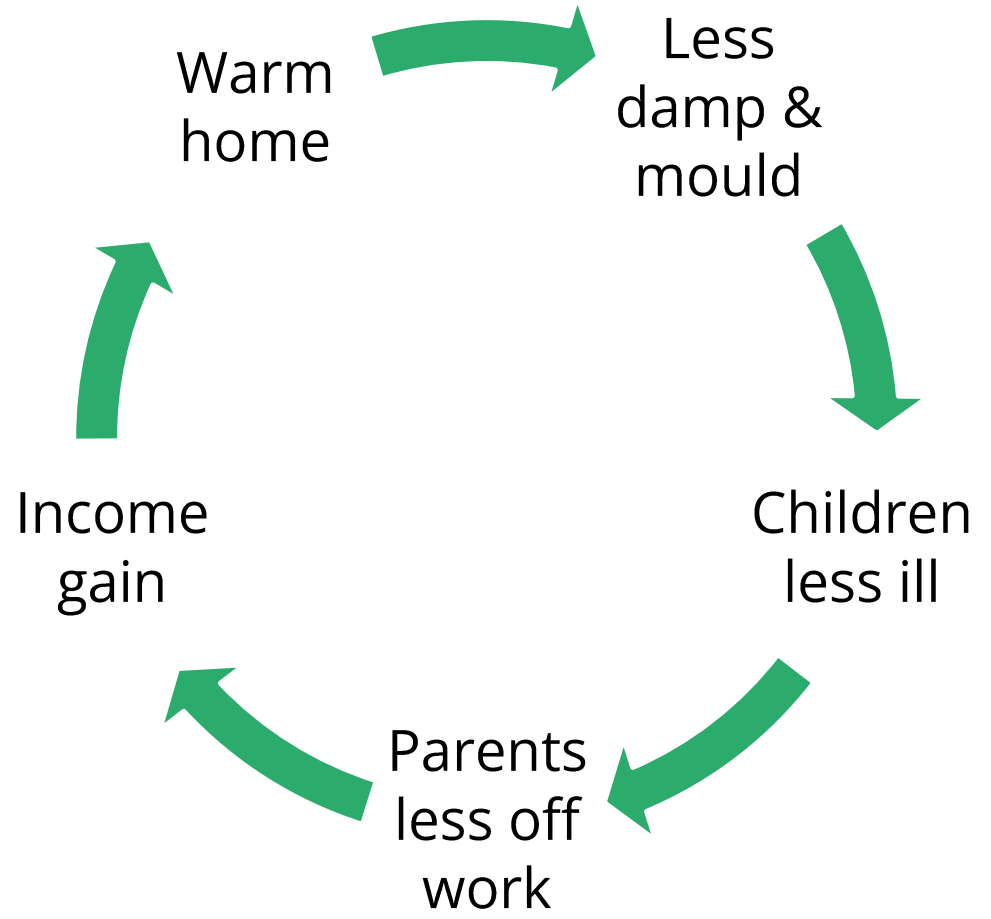


Downward and upward loops

DOWNWARD



UPWARD

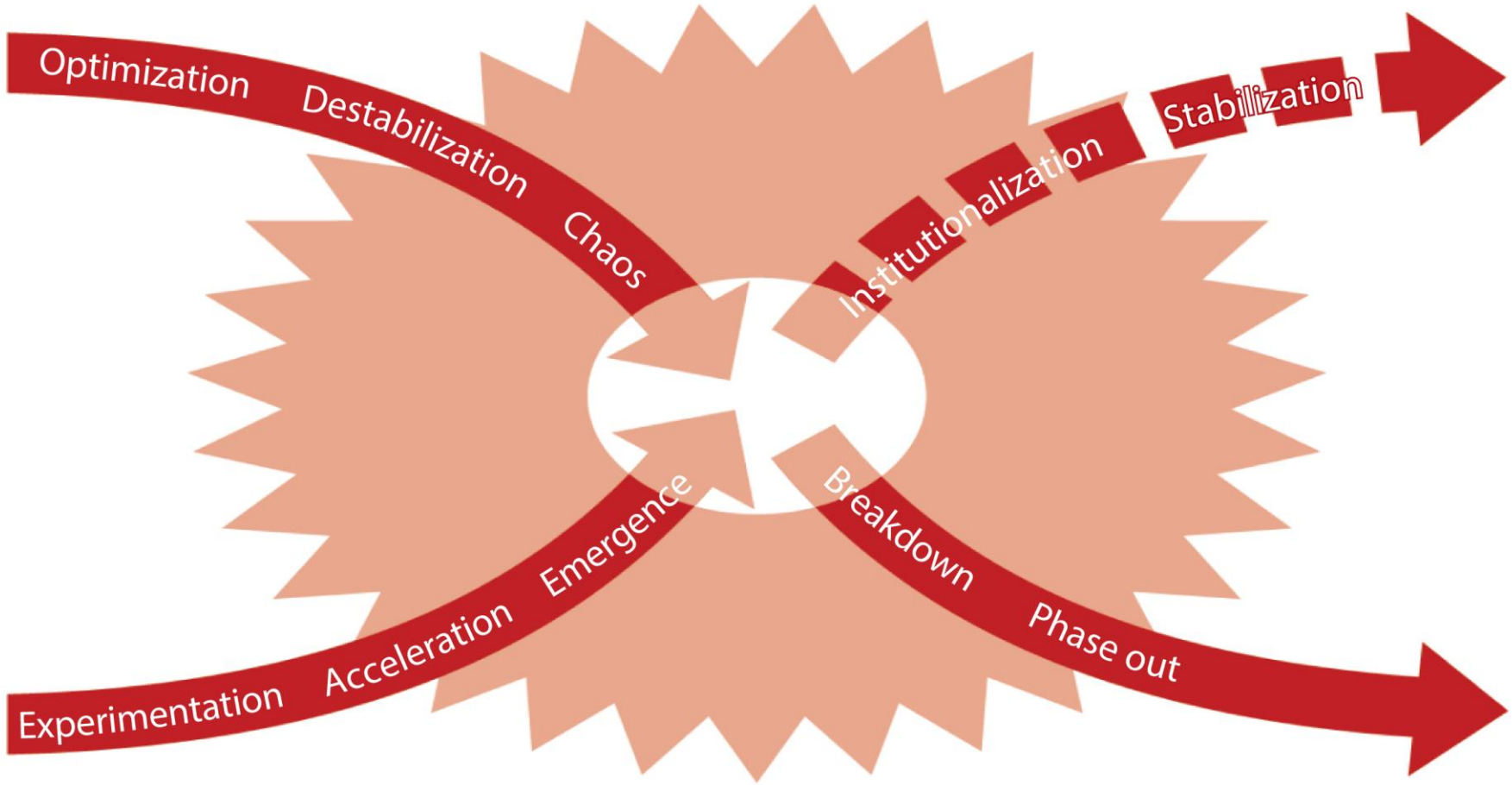


C40 (2024)

example ...

The Green Transition

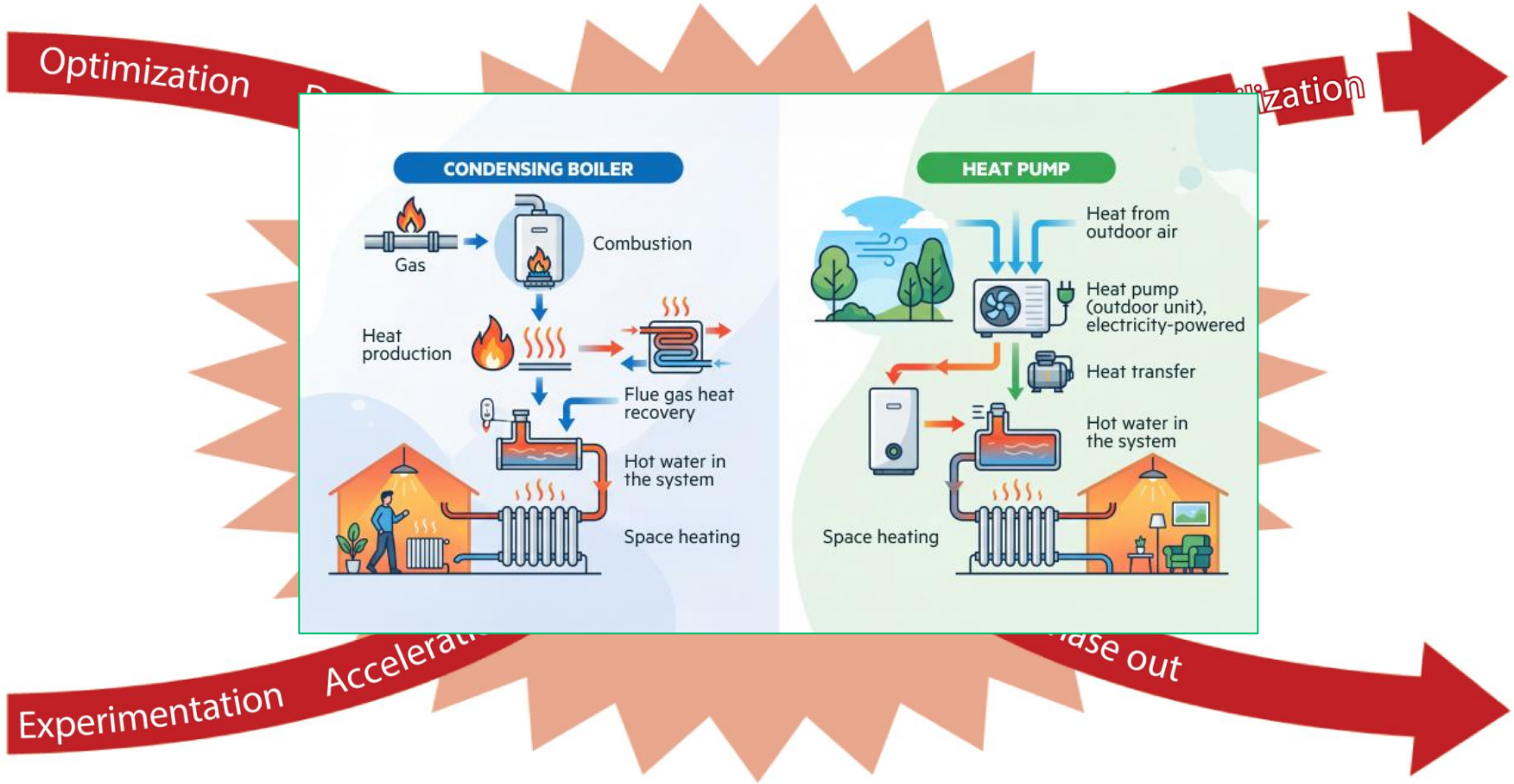
Green transition involves experimentation and disrupting long established ideas, technologies, and practices



Loorbach D, et al. 2017.
Annu. Rev. Environ. Resour. 42:599–626

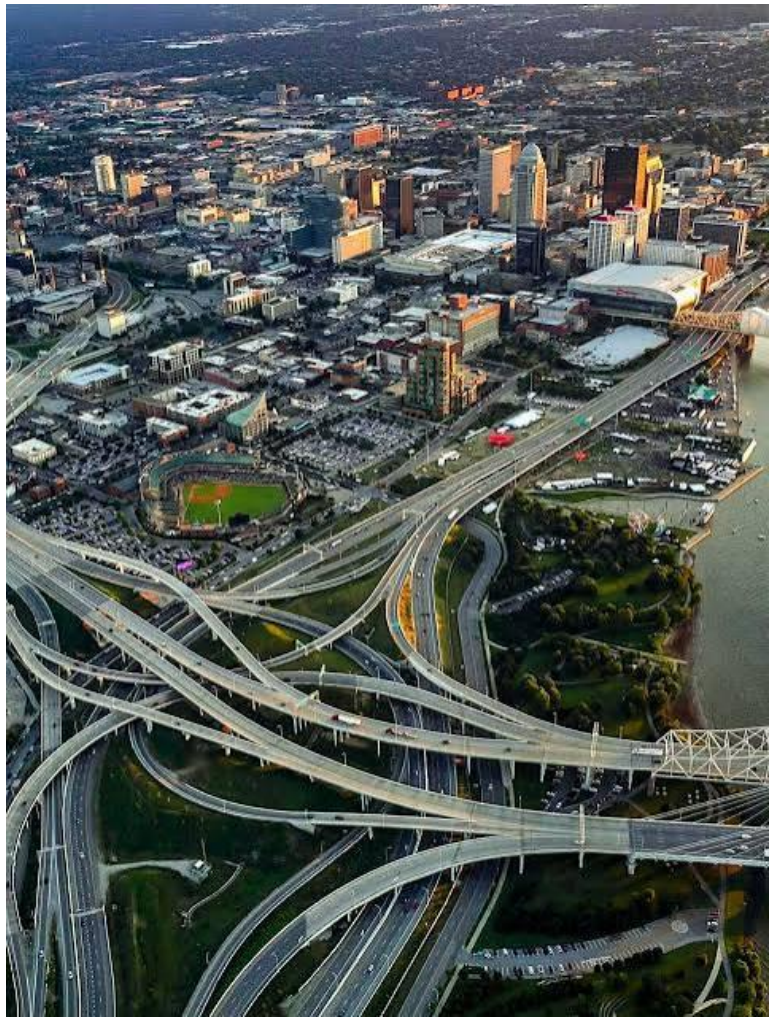
The Green Transition

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What are the lock-ins?



Lock-in: *"The concept of feeling "trapped" into certain technologies, behaviors, and/or relations …"* Goldstein 2023

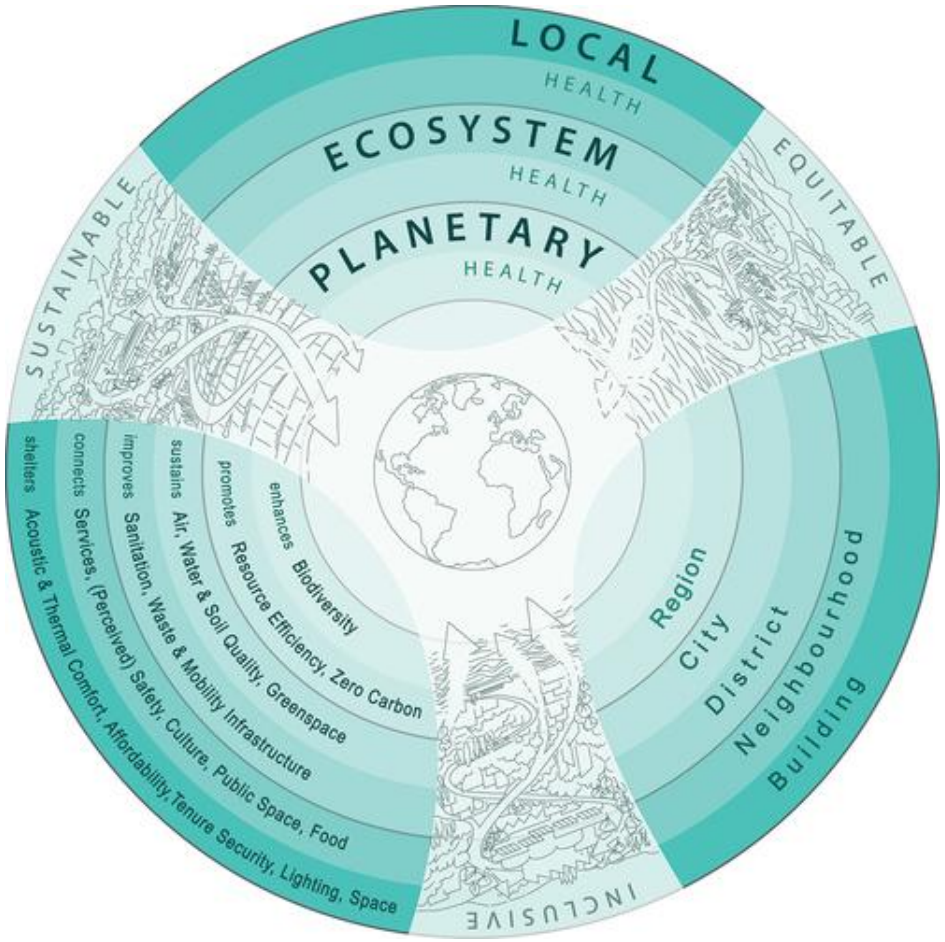
- A house lasts 100s of years
- Energy supply networks reflect fossil fuel era
- Changes have upfront costs, uncertainty, and pay-back periods
- …

The case …

- Poor quality housing makes people ill
- Given the complex nature of housing and health, can we make energy efficiency interventions work better for health outcomes?
- Is the whole greater than the sum of its parts?

- Can we identify the synergies (positive and negative), the trade-offs, the unintended consequences, the barriers and lock-ins?

Today's workshop



Problem

Too many households struggle with energy bills and sub-standard housing

Solution

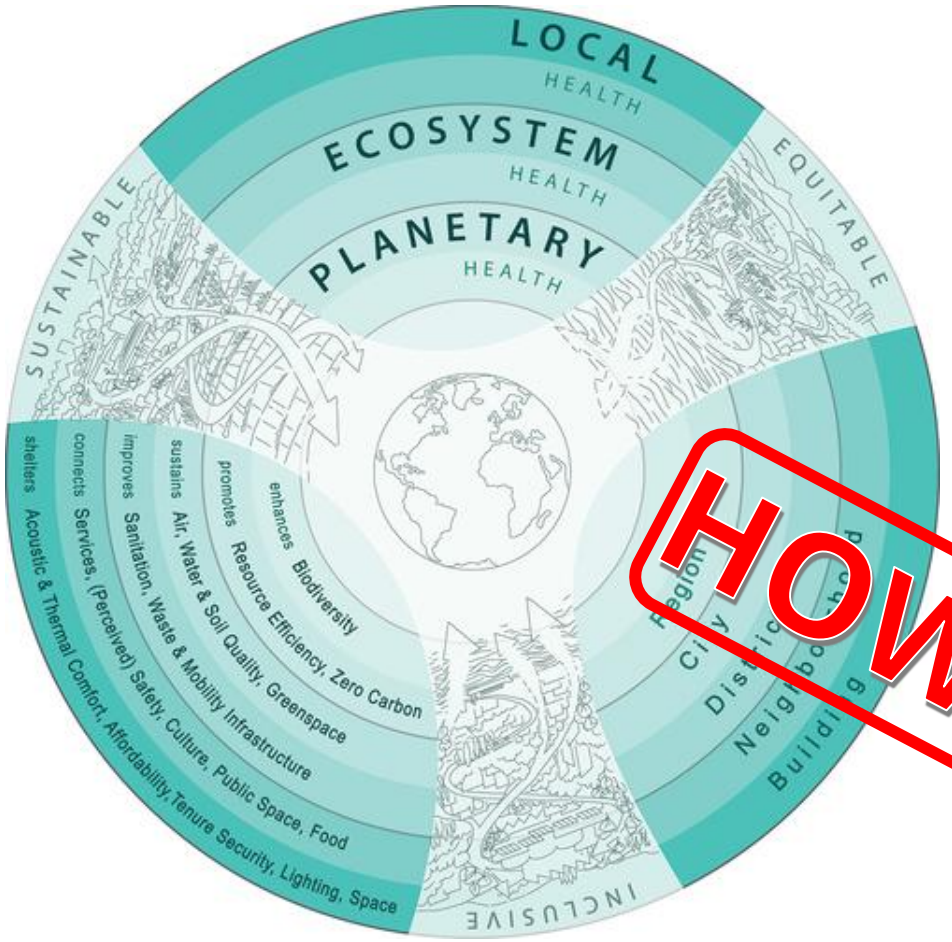
Gov energy efficiency schemes promise

- Lower energy bills
- Reduction in UK greenhouse gas emissions

…

- Better health for residents

Today's workshop



HOW?

WHY?

Problem

Too many households struggle with energy bills and sub-standard housing

Solution

Gov energy efficiency schemes promise

- Lower energy bills
- Reduction in UK greenhouse gas emissions
- ...

- Better health for residents

Housing Health "Monopoly"





Implementation barriers - People



Implementation barriers - Buildings



Output assumptions - People



Output assumptions - Systemic

Stations

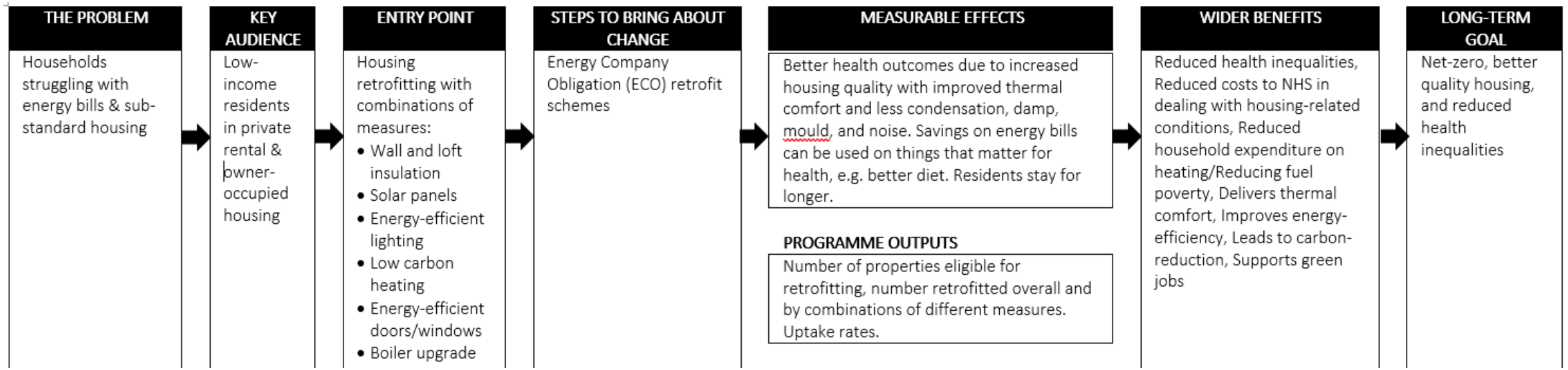


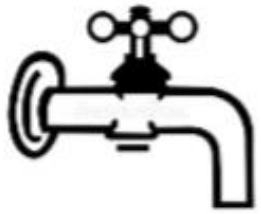
GO Pin anything that enables



Jail Pin anything that hinders

A quick input-output type intervention?



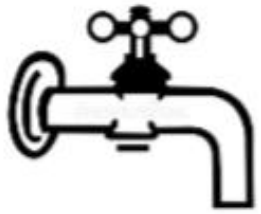


IMPLEMENTATION BARRIERS PEOPLE

The PPI workshops revealed multiple barriers for taking part in government retrofits incl. obtaining/understanding information, distrust and uncertainty in the short and longer term, although with community organisations playing a positive role

INFORMATION	ENGAGEMENT	FINANCIAL
?	?	?

Blurb with what we learned so far



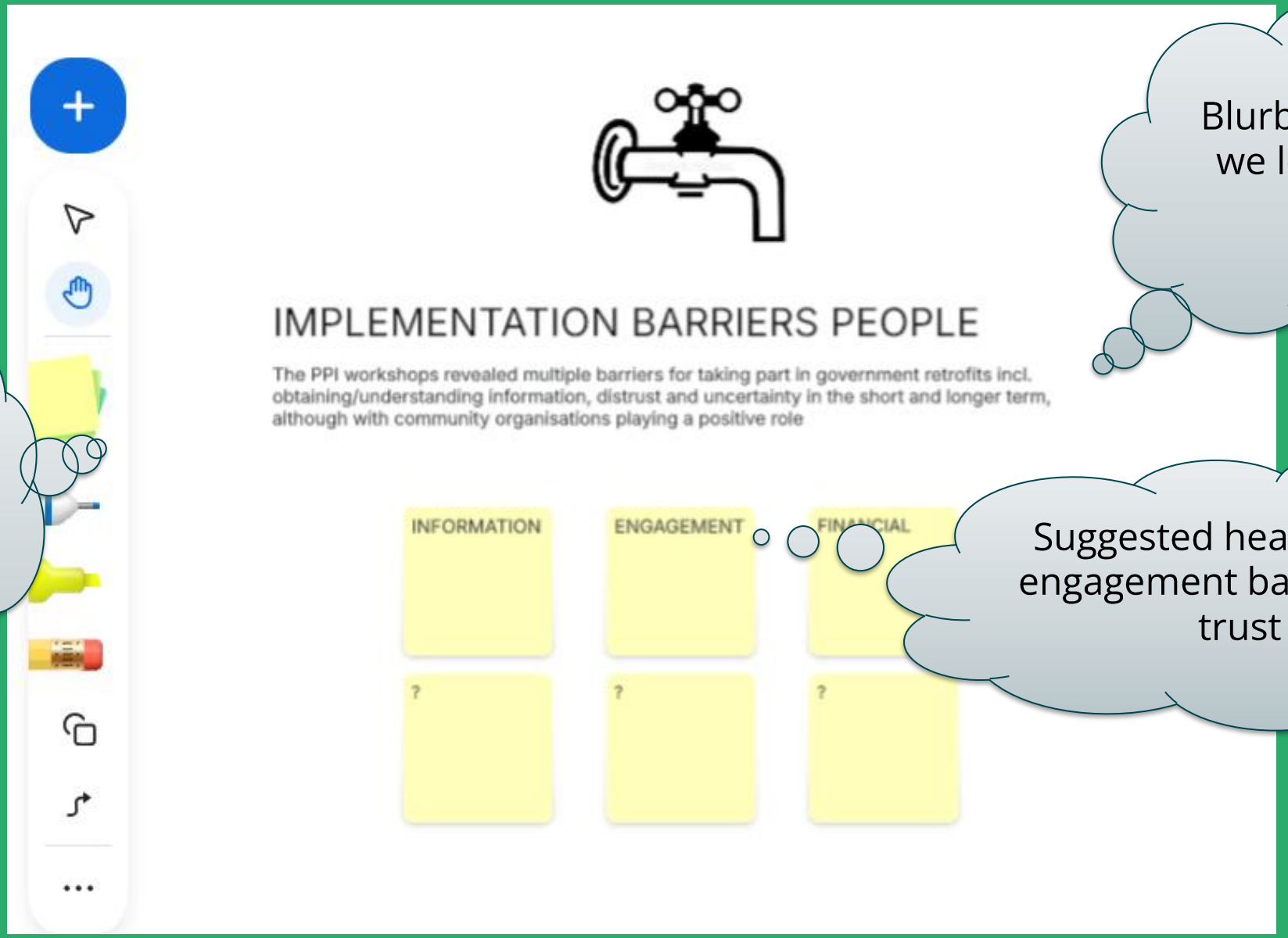
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INFORMATION	ENGAGEMENT	FINANCIAL
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Blurb with what we learned so far

Suggested headers, e.g. engagement barriers and trust



Blurb with what we learned so far

Help yourselves to more sticky notes, etc.

Suggested headers, e.g. engagement barriers and trust

Housing Health Monopoly

- Introduce yourself to new people in breakout rooms
- Discuss given topic for 15m first, then rounds of 10m
- 10m break at half time
- In between rounds … visit **GO** and **Jail**
- 1 person to feedback to the main room at the end



Reading

- Brownson, R.C., Chriqui, J.F., Stamatakis, K.A., 2009. Understanding Evidence-Based Public Health Policy. Am. J. Public Health 99, 1576–1583. https://doi.org/10.2105/AJPH.2008.156224
- Howden-Chapman, P., Bennett, J., Edwards, R., Jacobs, D., Nathan, K., Ormandy, D., 2023. Review of the Impact of Housing Quality on Inequalities in Health and Well-Being. Annu. Rev. Public Health 44, 233–254. https://doi.org/10.1146/annurev-publhealth-071521-111836
- Loorbach, D., Frantzeskaki, N., Avelino, F., 2017. Sustainability Transitions Research: Transforming Science and Practice for Societal Change. Annu. Rev. Environ. Resour. 42, 599–626. https://doi.org/10.1146/annurev-environ-102014-021340
- Pineo, H., 2022. Towards healthy urbanism: inclusive, equitable and sustainable (THRIVES) – an urban design and planning framework from theory to praxis. Cities Health 6, 974–992. https://doi.org/10.1080/23748834.2020.1769527

Public Involvement

- Begum, S., Khan, H., Leach, M., Smith, D., Petersen, J. (2026) Housing and health in the green transition: what London residents told us. Energy Poverty Research Network (EPRN), July 2026
- Khan, H, Begum, S., Smith, D., Leach, M., and Petersen, J. (2026) Housing Renovation & Health: Listening to Lived Experience. CoSine - Co-benefits in health from Sustainable housing Website [Blog]
- Petersen, J. (2026) Energy efficiency retrofits in Plain English – A glossary. CoSine participant materials. London School of Hygiene and Tropical Medicine (LSHTM)

Website



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