

## Housing and climate: we need urgent adaptation of UK homes to protect our health

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*We must ensure health is once again central to all housing policy, argue these authors*

The climate emergency is already affecting our homes<sup>1</sup> and will drive a range of key health risks in coming decades.<sup>2</sup> Many of these are closely connected to our housing system, including overheating and increased flood risks. This situation is further exacerbated in the UK due to its wider housing crisis, with high levels of unaffordability, particularly in the private rental sector, low tenure security, rising rates of homelessness and temporary accommodation use, and an ageing and poor quality housing stock.<sup>3</sup> UK homes are among the least energy efficient in Europe,<sup>4</sup> and the Committee on Climate Change has raised substantial concerns regarding our climate readiness.<sup>5</sup> Taken together, this will have an increasing impact on health and social care services over time, particularly for older adults and those with underlying illnesses.<sup>6</sup> There are now an estimated 2,000 heat related deaths per year in the UK, which could more than triple by the 2050s without adequate adaptation.<sup>1</sup>

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### <sup>1</sup>References

UK Climate Risk: Housing Briefing (2021). Findings from the third UK Climate Change Risk Assessment (CCRA3) Evidence Report 2021 <https://www.ukclimaterisk.org/wp-content/uploads/2021/06/CCRA3-Briefing-Housing.pdf>

<sup>2</sup> <https://wellcome.org/news/how-climate-change-affects-health-explained>

<sup>3</sup> Adam Timson and Amy Clair (2020). Better housing is crucial for our health and the COVID-19 recovery. Health Foundation. <https://www.health.org.uk/publications/long-reads/better-housing-is-crucial-for-our-health-and-the-covid-19-recovery>

<sup>4</sup> Baker, W., Acha, S., Jennings, N., Markides, C. and Shah, N. (2022). Decarbonising buildings: Insights from across Europe. Grantham Institute Briefing Paper. DOI: <https://doi.org/10.25561/100954>  
<https://spiral.imperial.ac.uk/bitstream/10044/1/100954/11/Full-text.pdf>

<sup>5</sup> Committee on Climate Change (2023). 'Climate change has arrived, yet the country is still strikingly unprepared' (Media Release). <https://www.theccc.org.uk/2023/03/29/climate-change-has-arrived-yet-the-country-is-still-strikingly-unprepared/>

<sup>6</sup> <https://wellcome.org/news/how-climate-change-affects-health-explained>

To protect public health, adapting homes and neighbourhoods to a hotter climate and increasing flood risks are urgent priorities. We spend approximately 90% of our time indoors,<sup>7</sup> more so for some vulnerable groups. The changes needed to keep people safe into the future require substantially more resourcing than current levels—although some relatively inexpensive, yet effective, measures (such as shutters and blinds) already exist.

Adapting both new and existing homes to the climate emergency is essential to protect health and wellbeing, since 20% of UK homes already experience overheating.<sup>8</sup> Over 80% of the homes we'll be using in 2050 are already built,<sup>9</sup> so we must ensure that housing adaptation is integrated properly into climate action and funded appropriately. Not prioritising adaptation of existing homes, and allowing construction of poorly-adapted homes—for example through loft conversions prone to overheating, inadequate ventilation, or building on flood plains—is an inexcusable false economy.

Efforts in the UK have largely focused on reducing buildings' greenhouse gas emissions, the second-highest emitting sector. While progress remains insufficient to ensure the decarbonisation of our building stock by 2050, and stronger action is required to reach net zero,<sup>10</sup> a high-level of adaptation is rapidly and urgently required.

The update to Part O of the Building Regulations, aiming to address overheating in new-build homes, is a positive step towards adapting our housing stock to climate change.<sup>11</sup> However, there are no equivalent regulations for existing homes, resulting in substantial societal impacts, while largely placing the burden of responsibility for adaptation on individuals. With time, the impacts of this policy gap are likely to grow, including over-reliance on air-conditioning—an

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<sup>7</sup> European Commission (2003) Indoor air pollution: new EU research reveals higher risks than previously thought [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_03\\_1278](https://ec.europa.eu/commission/presscorner/detail/en/IP_03_1278)

<sup>8</sup> Committee on Climate Change (2022). Risks to health, wellbeing and productivity from overheating in buildings <https://www.theccc.org.uk/wp-content/uploads/2022/07/Risks-to-health-wellbeing-and-productivity-from-overheating-in-buildings.pdf>

<sup>9</sup> Energy Saving Trust (2021). Retrofitting the UK's housing stock to reach net zero <https://energysavingtrust.org.uk/retrofitting-the-uks-housing-stock-to-reach-net-zero/>

<sup>10</sup> Committee on Climate Change (2023). Progress in reducing UK emissions - 2023 Report to Parliament.

<sup>11</sup> HMG. (2021). Approved Document O. Requirement O1: Overheating mitigation. Regulations: 40B. HM Government. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1040937/ADO.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1040937/ADO.pdf).

energy-intensive technology that also contributes to heating the local outdoor environment—summer energy poverty (enduring excessive heat in the summer),<sup>12</sup> and health inequalities.<sup>13</sup>

Regulations and measures that prioritise passive cooling measures can limit indoor overheating and reduce reliance on air-conditioning. Limiting solar gains through external shutters or internal blinds, reducing heat gains through the roof using improved insulation or reflective coatings, and improved cooling practices (e.g. night-time ventilation) are examples of effective strategies. The spaces around our homes are also key: Sustainable Drainage Systems (SuDS) and urban tree planting should be implemented at scale, both to reduce flood risk and for local cooling effects (tree cover can reduce temperatures by c. 5°C).<sup>1</sup>

The policy focus in upgrading our homes has often been too narrowly focused on mitigation, and often not recognising that different buildings need tailored, holistic solutions. Health often then suffers the consequences.

An example of this at the building level is that better-insulated, more airtight homes are important for Net Zero, but care is essential to avoid overheating, condensation, damp/mould and poor air quality.<sup>15,16</sup> Another recent example is that of people being unable to prevent heat from hot pipes in district heating systems from entering their homes during heatwaves.<sup>17</sup> Interventions should aim to respond to local needs and minimise unintended consequences.

At a neighbourhood level, systems approaches should include incorporating active travel infrastructure and green space when designing homes and neighbourhoods, and ensuring that education, work, amenities and leisure are locally accessible using sustainable transport. Close working of housing and development practitioners with planners, public health, transport experts and others is essential to maximise sustainability and health benefits. The participatory THRIVES framework, which highlights environmental degradation and barriers to health in

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<sup>12</sup> Sanchez-Guevara, C., Núñez Peiró, M., Taylor, J., Mavrogianni, A. and Neila González, J. (2019). 'Assessing population vulnerability towards summer energy poverty: Case studies of Madrid and London'. *Energy and Buildings*, 190, pp. 132–143. doi: 10.1016/j.enbuild.2019.02.024.

<sup>13</sup> Taylor, J., McLeod, R., Petrou, G., Hopfe, C., Mavrogianni, A., Castaño-Rosa, R., Pelsmakers, S. and Lomas, K. (2023). 'Ten questions concerning residential overheating in Central and Northern Europe'. *Building and Environment*, 234, p. 110154. doi: 10.1016/j.buildenv.2023.110154.

<sup>15</sup> Petrou G, Hutchinson E, Mavrogianni A, Milner J, Macintyre H, Phalkey R, Hsu SC, Symonds P, Davies M, Wilkinson P. Home energy efficiency under net zero: time to monitor UK indoor air. *BMJ*. 2022 May 9;377. Available at: <https://www.bmj.com/content/377/bmj-2021-069435>

<sup>16</sup> BBC News (2017) Residents' fight against cavity wall insulation issues <https://www.bbc.co.uk/news/uk-wales-42165358>

<sup>17</sup> Dahaba Ali Hussen (2023). District heating leaves London residents sweltering during heatwave. Bureau of Investigative Journalism. <https://www.thebureauinvestigates.com/stories/2023-09-11/no-escape-communal-heating-makes-homes-unbearable-during-heatwave>

urban policy, could help support the development of inclusive, equitable and sustainable systems-based solutions.<sup>18</sup>

The key actions required to prepare our housing system for the risks of the climate emergency are clear, but achieving them will be complex and require sustained commitment.

There is an obvious funding and skills gap to drive the health protecting climate adaptation that the UK's housing system requires, but changes to building regulations and planning systems will also be crucial. Importantly, these changes must be closely informed by the experiences and needs of local communities. At the birth of the NHS, Aneurin Bevan was Minister for Housing and Health: we must now ensure health is once again central to all housing policy.

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<sup>18</sup> <https://healthyurbanism.net/thrives-2/>