Compass Works
RESEARCH & INSIGHTS

DISCUSSION PAPER
CWI-002

CLIMATE ADAPTATION · HOUSING · ENERGY SYSTEMS

Rethinking Domestic Cooling

Climate adaptation, access and systems thinking beyond the binary AC debate

PUBLISHED AUGUST 2026

EXECUTIVE SUMMARY

Hotter summers are turning domestic cooling into a more immediate climate-adaptation question, at a time when most of England's housing stock predates current national overheating-mitigation requirements. Households are already responding, yet both the need for cooling and the options realistically available differ sharply between people, buildings and tenures.

This paper separates two questions too often collapsed into one: whether a household's cooling need is legitimate, and how that need should be met. It sets out a cumulative hierarchy that keeps passive and upstream measures first while accepting that they may not always be sufficient or accessible. Where refrigeration-based active cooling is needed, equipment choice, installation quality and compatibility with the shift to electric heating matter, as do total electricity use, hot-weather peaks and refrigerants. A responsible transition therefore neither makes active cooling the default nor treats it as a failure; it helps households reach a sufficient response while reducing avoidable environmental and social costs.

WHY THIS MATTERS

Adaptation is already under way.

Hotter summers are affecting homes built for a different climate, and households across England are already responding through behaviour, building measures and cooling equipment.

Need and access differ.

Heat affects people and dwellings unequally, while money, tenure, consent and control over the property shape which cooling measures a household can realistically use.

System choices compound.

Where active cooling is needed, equipment and installation choices affect heating integration, electricity use, hot-weather peaks and refrigerant impact, making the transition something to manage rather than avoid.

1 THE FRAMING

The debate is binary, but the transition is already under way

As hotter summers make overheating harder to dismiss, domestic cooling has become a more immediate household and policy question. Households are already responding, through behaviour, ventilation, shading, fans, and portable or fixed air conditioning (AC).[1]

The debate around domestic cooling often narrows to two positions: that cooling is a matter of health, sleep and safety, or that refrigeration-based active cooling can increase electricity use and peak demand, add refrigerant impacts and risk diverting attention from building design.[2] Both are real, but they answer different questions. A legitimate need does not make every response equally sustainable, and environmental concern does not make the need illegitimate.

Cooling need should not be moralised; the means used to meet it should still be assessed. Answering that begins with the conditions households face, the homes they occupy and the responses already emerging.

TWO QUESTIONS TO HOLD APART

Is the need for cooling legitimate?

Health · sleep · safety

How should that need be met?

Electricity use · peak demand · refrigerants · building design

How should legitimate cooling need be met responsibly, accessibly and as part of the wider energy transition?

1 Met Office; Jones et al. (2026), analysing the English Housing Survey 2023–24; NESO, *Future Energy Scenarios 2025*; BEIS, *Cooling in the UK.*

2 IEA, *The Future of Cooling*; research on AC and the Great Britain electricity system; refrigerant and installation sources. The upstream-displacement point is Compass Works practitioner interpretation.

2 EVIDENCE

A changing climate meets a slow-changing housing stock

40.3°C

The UK's first recorded temperature above 40°C, at Coningsby on 19 July 2022.

1,504

Estimated heat-associated deaths in England across five heat episodes in summer 2025.

4.3%

Households in England reporting summer AC use in 2023–24, about 1.06 million homes.

The UK's summers are getting hotter. Days far above the seasonal average have become markedly more frequent over the past decade, and in July 2022 temperatures passed 40°C for the first time on record.[1] Heat is also associated with measurable mortality: in summer 2025 the UK Health Security Agency estimated 1,504 heat-associated deaths in England across five heat episodes.[1]

That response is already measurable. In the English Housing Survey 2023–24, 4.3 per cent of households in England, about 1.06 million homes, reported using air conditioning to keep cool in summer.[2] That share is still relatively low, but it is not negligible, and future uptake is expected to increase, although projections vary widely.[2]

England has recognised the risk. Approved Document O, in force since June 2022, introduced overheating-mitigation requirements for specified new residential buildings.[3] It does not regulate the existing stock retrospectively, and that is where most of the challenge sits: England has roughly 25.8 million dwellings, while a year of net additions is around 208,600, close to 0.8 per cent of the stock.[4] Regulation acts on a small annual flow; adaptation must reach the homes people already occupy.

Passive-first measures remain essential, but they cannot be assumed to eliminate overheating risk in every dwelling; overheating already occurs in parts of the stock, and even newer homes can be affected.[4] Research from the Energy Demand Research Centre (EDRC) found the highest reported AC use among households in 21st-century homes, a pattern consistent with, but not proof of, overheating concerns in some modern, highly insulated and airtight housing.[4]

The challenge is therefore not only how many homes must adapt, but how differently heat and cooling need are experienced within them.

FIGURE 1

Existing housing stock and annual additions

Fig. 1 — Scale comparison only. Net additions illustrate housing-stock turnover, not the dwellings covered by Approved Document O.

1 Met Office heat records and trends; UKHSA heat-mortality monitoring for England.

2 Jones et al. (2026), analysis of the English Housing Survey 2023–24; NESO and BEIS evidence on future uptake.

3 MHCLG, Approved Document O: Overheating; England, specified new residential buildings and non-retrospective scope.

4 MHCLG dwelling-stock and housing-supply statistics; CCC; CIBSE TM59; EDRC dwelling-age analysis; peer-reviewed overheating studies.

Cooling need reflects both vulnerability and exposure

It is tempting to judge another household's cooling by our own: this heat feels bearable, my home stays comfortable, people once managed without it. But one person's tolerance, building and daily routine are no benchmark for anyone else, and the reasons a household reaches for cooling are often invisible from outside.

Two things shape that need. Vulnerability is how strongly heat affects a person: age, illness, disability or medication, infants and young children, physiology and acclimatisation all matter.[1] No single indoor temperature is safe or comfortable for everyone, and comfort shifts with humidity and activity.[2] Exposure is different: how long and how inescapably heat is felt. Prolonged occupancy, home working or care responsibilities keep people indoors through the hottest hours, while upper-floor or single-aspect homes, solar gain where shading is poor, restricted ventilation and overcrowding all make heat harder to escape.[3]

Two homes under the same weather can carry very different indoor burdens, and reported cooling use does not map neatly onto need: low use within a group need not mean low vulnerability; it may instead reflect needs being met in other ways, tolerated or left unmet.[4]

Once a legitimate need is established, the assessment turns to delivery. Carbon, refrigerants, energy demand, noise and neighbour impacts remain relevant, but they are reasons to assess the response rather than dismiss the need. The next question is how an appropriate and accessible combination of measures can be assembled.

FIGURE 2

Two dimensions of cooling need

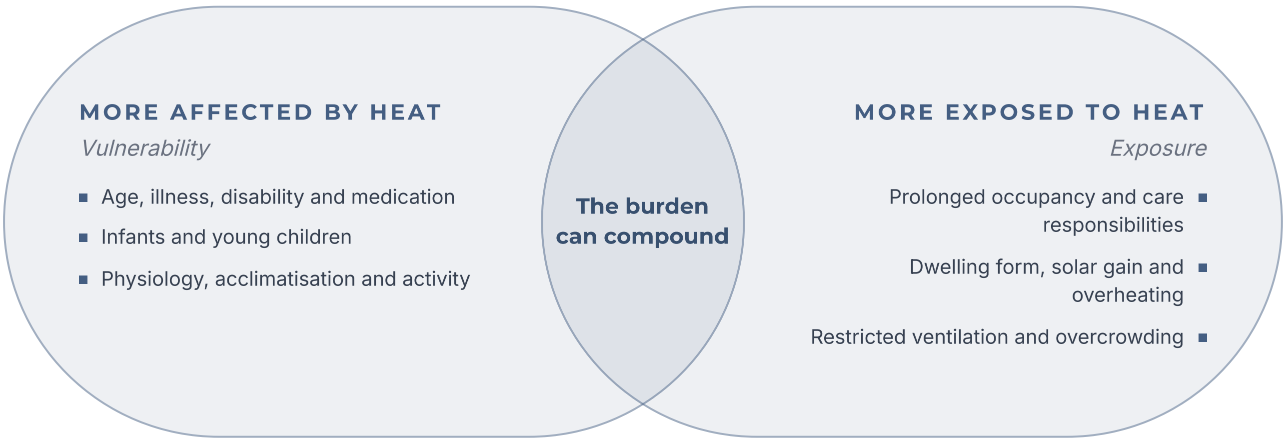

Fig. 2 — The reasons for cooling need may be invisible from outside, and reported cooling use is not a direct measure of that need.

1 UKHSA, Adverse Weather and Health Plan 2025–26; WHO Housing and Health Guidelines 2018.

2 WHO, *Housing and Health Guidelines* (2018); ANSI/ASHRAE Standard 55-2023 on adaptive thermal comfort.

3 Approved Document O; CIBSE TM59; peer-reviewed overheating research; CCC; English Housing Survey 2023–24.

4 EDRC RADFutures (2026) on home working as an occupancy driver and the mismatch between reported use and need.

Seven levels of cooling decisions, applied cumulatively

The seven-level hierarchy developed here turns that question into a sequence of decisions aimed at a sufficient combined response.

Passive-first cooling sequences are not new: the London Plan's cooling hierarchy and the passive-first logic of Approved Document O both move from preventing unwanted heat gain toward mechanical cooling only where earlier measures fall short.[1] Building on that lineage, the hierarchy here adapts the principle for a different question: not only how a new building should be designed, but how a household can assemble a sufficient response. The levels set out the decision opportunities; the framework explains how households assess and combine them.

The hierarchy is cumulative rather than exclusive. Each of the seven levels is a potential decision opportunity, not a rung every household must start from, nor a single option that rules out the others. Measures already in place stay part of the response, and moving to another level does not mean the earlier one failed. A household with no influence over neighbourhood design or a building's orientation may still add shading, manage ventilation and, where needed, cool actively. An earlier measure may help materially yet still leave the need unmet.[2]

FIGURE 3

The responsible domestic cooling hierarchy

A household-centred framework for assembling a sufficient cooling response

↑ UPSTREAM AND SYSTEMIC PREVENTION

↓ DIRECT INDIVIDUAL CONTROL AND IMMEDIACY

1	Urban planning and public-realm cooling
2	Climate-responsive new-building design
3	Retrofit and solar control
4	Operational measures and natural ventilation
5	Air movement and controlled ventilation
6	Fixed active cooling and reversible heat pumps
7	Portable or temporary active cooling

AT EACH APPLICABLE LEVEL

1. Can the household influence or choose it?
2. Can it realistically be implemented?
3. Is the combined response sufficient?

If not, continue while retaining useful measures.

Fig. 3 — Each level is a decision opportunity, not a measured score or a mutually exclusive solution.

1 London Plan 2021, Policy SI 4 cooling hierarchy; Approved Document O passive-first sequencing. Lineage only, not the seven-level framework set out here.

2 Approved Document O (new residential buildings, non-retrospective); existing-stock evidence and CCC on homes occupied in 2050.

The order is not neutral, but it is not a ranking either

At each applicable level three questions apply: whether the decision is still open or can be meaningfully influenced; whether it can realistically be implemented; and whether, together with what is already in place, it meets the cooling need established earlier. A "no" does not strip a measure of value; it can remain in the package while the assessment continues to the next applicable level.

The order is not neutral. Upstream measures prevent or reduce heat before energy-dependent cooling is needed. Where they are available, feasible and sufficient, they should come first. But the framework does not assume they always will be. Two broad directional tendencies run through the sequence. Upstream measures generally offer wider reach and greater prevention, while lower levels generally offer more direct and immediate individual control. This directional tendency does not imply that either quality changes uniformly at every step, or that the levels form a measured environmental score.

Fans improve perceived comfort without removing heat from the room; ventilation can remove heat where outdoor conditions and airflow permit; refrigeration-based systems remove it more directly and reliably.[1] Fixed or portable active cooling may therefore emerge from a rational process, not as an automatic first response, where earlier measures prove insufficient.

The hierarchy describes decision opportunities in principle. In practice, households differ sharply in which of those decisions they can actually make, the subject of the next section.

> **A lower-level option may represent constrained choice rather than environmental indifference.**

TABLE 1

What each level contributes, and why it may not be enough

LEVEL	CONTRIBUTION TO THE RESPONSE	WHY FURTHER MEASURES MAY BE NEEDED
1 **Urban planning and public-realm cooling**	Reduces neighbourhood and outdoor heat exposure	Location may be fixed or insufficient to prevent indoor overheating
2 **Climate-responsive new-building design**	Prevents heat gain through form, orientation, shading and ventilation design	Choice is limited to available stock, and good design may not meet every occupant's need
3 **Retrofit and solar control**	Reduces heat entering or accumulating after occupation	Cost, consent, technical constraints or partial effectiveness may limit the result
4 **Operational measures and natural ventilation**	Provides immediate, low-energy heat management	Weather, security, noise and layout may constrain effectiveness
5 **Air movement and controlled ventilation**	Improves perceived comfort or provides controlled air exchange	Fans do not exchange air; ventilation may not remove enough heat
6 **Fixed active cooling and reversible heat pumps**	Provides controlled and reliable heat removal	Requires capital, siting, permissions and appropriate system design
7 **Portable or temporary active cooling**	Provides rapid local or temporary relief	Infiltration, exhaust-hose heat gain, noise, sealing and limited coverage reduce performance[2]

Individual control is carried by the opposing arrows in Figure 3.

1 Evidence that recirculating fans provide air movement but not outdoor-air exchange, and that ventilation does not always remove heat effectively.

2 DOE portable-AC test procedure and regulatory analysis on single-duct infiltration and exhaust-duct heat transfer; performance varies by design and installation.

Cooling choices are not equally available

Whether a household can influence and implement a cooling decision depends on money, tenure and authority over the property. Those facing greater exposure may also have limited capital or control to change it.

Cooling need and capacity to respond do not necessarily align. EDRC found that reported AC use in England rose with household income and was lower among renters and social-housing tenants.[1] Tenure differences weakened after adjustment, so the pattern is descriptive rather than proof of causation.

Three filters shape capacity. Capital affects access to retrofit, shading, better-performing systems and competent installation. Tenure and control determine whether windows, façades or services can be altered; consent and split incentives can prevent action.[2] Siting, noise and building-management rules create further constraints.

Reliance on operational measures, fans or portable cooling may therefore reflect constrained choice rather than preference. Some upstream decisions may already be closed, while retrofit or fixed systems lie outside household control. Temporary measures remain directly deployable and can contribute to a cumulative response, but may not be sufficient alone. Reliance on them should not be mistaken for indifference to environmental performance.[3]

Where permanent active cooling options are available, the next question is which form of active cooling can meet the need without closing off wider energy-transition opportunities.

FIGURE 4

The same hierarchy, different decision space for existing homes

UPSTREAM AND SYSTEMIC PREVENTION

DIRECT INDIVIDUAL CONTROL AND IMMEDIACY

		Permanent interventions available *Property control, some investment capacity and workable installation conditions.*	**Temporary measures most actionable** *Capital, consent, property control or siting restrict permanent interventions.*
1	Urban planning and public-realm cooling	Closed by current location	Closed by current location
2	Climate-responsive new-building design	Closed by existing dwelling	Closed by existing dwelling
3	Retrofit and solar control	Building-dependent measures available where capital allows	Limited by capital, consent or control
4	Operational measures and natural ventilation	Open	Open; building conditions may limit effect
5	Air movement and controlled ventilation	Fans and installed ventilation open	Fans actionable; installed ventilation limited
6	Fixed active cooling and reversible heat pumps	Available where capital and siting allow	Limited by capital, consent or siting
7	Portable or temporary active cooling	Available as a supplementary option	Most actionable option; may be insufficient

Open — meaningfully actionable at this level

Partly open — some measures or applications available, others limited

Constrained — substantial barriers such as capital, consent, control or siting

Closed — no longer open at this decision point

Fig. 4 — Illustrative decision spaces for households in existing dwellings. Profiles are situational, not demographic; open options may be combined, but the most accessible response may still be insufficient.

1 Jones et al. (2026), analysis of English Housing Survey 2023–24: reported AC use rises with income and is lower among renters and social tenants.

2 Landlord/freeholder consent, split incentives and building constraints can restrict retrofit and fixed cooling options.

3 Reported AC use does not map neatly onto need; capital, control and installation requirements shape available options.

Active cooling is not a single system choice

That choice is not only about which appliance provides cooling, but whether the system supports, coexists with or forecloses heating electrification, the shift from fossil-fuel heating towards electric systems.

Four pathways provide active cooling on different terms. Portable units offer local, rapidly deployable cooling. Cooling-only fixed splits provide efficient fixed cooling but no heating, so later electrification may require separate equipment. Reversible air-to-air heat pumps provide zoned heating and cooling, usually without domestic hot water and not necessarily to every room. Reversible air-to-water systems can combine whole-home heating, hot water and cooling where distribution is compatible, but retrofit can be disruptive.[1,2, 3]

Economics depend on the comparison. Cooling as a standalone purchase is judged on its own. Where heating replacement is already planned, the relevant question may be the marginal cost of choosing a reversible system rather than installing separate equipment later. Running costs depend on tariffs, performance, use and the incumbent system; across the UK, electricity is generally priced above mains gas, with different market arrangements in Great Britain and Northern Ireland.[4]

The same need can therefore lead to fragmented single-purpose equipment or coordinated investment that also supports heating electrification. Which pathway dominates depends on whether the transition is managed.

TABLE 2

Four pathways, four different sets of terms

	PORTABLE OR TEMPORARY COOLING	COOLING-ONLY FIXED SPLIT	REVERSIBLE AIR-TO-AIR HEAT PUMP	REVERSIBLE AIR-TO-WATER HEAT PUMP
COOLING ROLE	Local, rapidly deployable cooling	Efficient, controlled room or zoned cooling	Efficient, controlled room or zoned cooling	Hydronic cooling through fan-coil units or other compatible emitters
HEATING / HOT WATER ROLE	None	None	Room or zoned heating; usually no domestic hot water	Whole-home space heating and potentially domestic hot water, depending on design
INTEGRATION OPPORTUNITY	Temporary or bridging measure; no major permanent installation	Effective where cooling alone is the intended service	Combines cooling with electric space heating where targeted zones are sufficient	Can combine whole-home heating, hot water and cooling where building and distribution are compatible
MAIN LIMITATION	Infiltration, exhaust-hose heat gain, noise, sealing and limited coverage	No heating-electrification co-benefit; separate future heating equipment may duplicate investment; planning route differs where solely cooling[1]	May not serve every room; supplementary heating and separate hot-water provision may remain necessary[2]	Cooling-compatible emitters, insulated pipework, condensate management, controls and retrofit disruption; standard radiators generally unsuitable[3]

Across all pathways, refrigerant choice, leakage control and maintenance affect lifecycle impact.[5]

1 Cooling-only splits provide no heating. In England, permitted development excludes units installed solely for cooling.

2 Reversible air-to-air systems provide zoned heating and cooling, usually without domestic hot water; supplementary heating may remain.

3 Air-to-water cooling needs compatible emitters and controls; standard radiators are unsuitable, and condensation risk must be managed.

4 UK household electricity generally costs more than mains gas by over 4 times in 2026; tariff differences across Great Britain and Northern Ireland affect outcomes.

5 Refrigerant leakage affects climate impact; refrigerant choice, installation and maintenance shape lifecycle performance.

Active cooling needs a managed transition

Even where the hierarchy indicates that active cooling is needed, the outcome is not neutral. At household level, an appropriately selected system may provide a legitimate and effective response. At scale, however, wider uptake of domestic active cooling can raise total electricity use and create sharper peaks during hot periods.[1]

Adoption and associated electricity demand are projected to grow, although the scale remains highly uncertain.[1] Poorly matched or poorly installed equipment can amplify these total and peak-demand effects, and easier or more comfortable cooling may increase use, so appliance efficiency alone does not guarantee lower aggregate demand; refrigerant leakage adds a separate climate impact.[2] Poorly planned growth in active cooling could also weaken attention to solar control, fabric and ventilation measures.[3]

These risks do not invalidate active cooling where it is needed. They show why its growth should be anticipated and managed.

A managed transition retains the hierarchy's passive-first preference, supports efficient and competently installed systems where active cooling is required, avoids unnecessary single-purpose equipment where integration is suitable, and anticipates both total and peak electricity demand. Unmanaged uptake, by contrast, can leave households reliant on poorer-performing emergency purchases and unsuitable equipment, with more unequal outcomes.

Managing active-cooling uptake therefore requires it to be treated at once as an adaptation, housing, building-performance and energy-system issue.

FIGURE 5

Same need, different transition

BRANCH POINT

Rising heat exposure and household cooling need

MANAGED ACTIVE-COOLING TRANSITION

1. Recognise and assess need
2. Apply the hierarchy and retain upstream measures
3. Use efficient, suitable active cooling where required
4. Anticipate demand and align with wider electrification where appropriate

UNMANAGED ACTIVE-COOLING TRANSITION

1. Reactive active-cooling purchases
2. Poorly matched, lower-performing or poorly installed systems
3. Higher total and peak electricity demand
4. Fragmented and unequal outcomes

Fig. 5 — Illustrative pathways from the same cooling need. A managed transition retains upstream measures, improves system choice and anticipates demand; unmanaged uptake risks fragmented choices and sharper system impacts.

1 NESO, BEIS and IEA project growth in domestic AC use and demand, with wide uncertainty over scale and peak effects.

2 Efficiency, installation, use patterns and refrigerant leakage shape total demand and lifecycle impact.

3 The pathways are Compass Works synthesis; displacement of passive measures is a bounded practitioner concern, not a proven UK effect.

What a responsible domestic cooling transition requires

That wider view returns to the paper's starting distinction: the legitimacy of cooling need and the sustainability of cooling provision are separate questions, but a responsible response must hold them together. Recognising need does not endorse every technology, and environmental concern does not justify dismissing it. The point of a framework is to move the debate from judgement to structured decision-making.

A responsible response begins with upstream and passive measures where they are available, feasible and sufficient, retains what helps, and continues through the hierarchy where the combined package still falls short, asking at each step what a household can influence and implement.[1] The hierarchy is shared in principle, but access to its decision opportunities is not.

Where active cooling is required, system choice matters: equipment should be efficient, well matched and competently installed, and reversible systems may support heating electrification where building, distribution and economics align. At scale, active-cooling adoption, hot-weather peaks and refrigerant impacts should be anticipated rather than left to reactive purchasing.[2]

This requires action across adaptation, housing, building performance and energy-system planning. The implications differ by audience, but the objective is shared: improve the routes through which households can reach a sufficient response.

> **The goal is not to make active cooling routine, but to ensure that households are not left with responses that are ineffective, inaccessible or unnecessarily damaging.**

TABLE 3

What this means in practice

AUDIENCE	PRACTICAL IMPLICATION
Sustainability and real-estate professionals	Assess cooling need, building performance and occupier decision space together; do not reduce the issue to AC installation or avoidance.
Designers, engineers and installers	Retain upstream measures, then design active systems around the building, required service and future heating pathway.
Housing providers and policymakers	Extend adaptation beyond new-build standards and address the capital, tenure and control barriers shaping what households can use.
Energy policymakers and network planners	Plan active-cooling uptake alongside heating electrification, total electricity use and hot-weather peaks.

1 Compass Works synthesis of evidence on cooling need, the hierarchy and unequal access developed across Pages 3–7.

2 Audience implications synthesise Pages 8–9 evidence on system choice, electricity demand, refrigerants and transition management.

ABOUT THIS PAPER

METHODOLOGY

This practitioner-led discussion paper was developed through claim-by-claim evidence mapping. Each load-bearing number, policy scope and technical proposition was checked against primary, official and peer-reviewed sources where available, and confirmed for its jurisdiction and currency. The drafting process distinguished three kinds of statement: source-supported findings, bounded practitioner interpretation, and Compass Works synthesis and framework development.

The hierarchy and its three household tests are therefore presented as a practitioner framework built from the reviewed evidence, not a model reproduced from any single source. The paper does not rest on original household survey research, building-energy simulation or grid-demand modelling. Where the evidence is genuinely uncertain, that uncertainty is stated rather than resolved.

SCOPE AND LIMITATIONS

Geography. England is the principal regulatory and housing context. Great Britain or UK evidence is used only where the underlying source supports that geography, with Northern Ireland distinguished where market or tariff arrangements materially differ.

Evidence currency. The paper reflects evidence and policy positions verified for publication in August 2026. Projections remain uncertain and scenario-dependent, and later regulatory, tariff or technical changes may require revision.

Analytical boundary. This paper does not provide building-specific load calculations, original energy-system modelling, a full life-cycle carbon comparison of every technology, or a property-level cost-benefit appraisal.

Use of the framework. The hierarchy supports structured decision-making rather than calculating a universally optimal or lowest-carbon solution. Specific buildings, systems and household needs may require professional assessment.

SELECTED REFERENCES

A selected list of the sources carrying the paper's argument, not the full evidence base. Ordered alphabetically. Full evidence register available on request.

ANSI/ASHRAE (2023) *ANSI/ASHRAE Standard 55-2023: Thermal Environmental Conditions for Human Occupancy*. Peachtree Corners, GA: ASHRAE.

BEIS (2021) *Cooling in the UK*. Prepared by AECOM, Delta-EE and the University of Exeter. BEIS Research Paper 2021/050.

Buildings and Cities (2021) 'Summertime overheating in UK dwellings'. *Buildings and Cities* (peer-reviewed).

Chartered Institution of Building Services Engineers (CIBSE) (2017) *TM59: Design methodology for the assessment of overheating risk in homes*. London: CIBSE.

Climate Change Committee (2019) *UK housing: Fit for the future?* London: Climate Change Committee.

Drury, P., Watson, S. and Lomas, K.J. (2021) 'Summertime overheating in UK homes: is there a safe haven?', *Buildings & Cities*, 2(1), pp. 970–990. doi: 10.5334/bc.152.

Greater London Authority (2021) *The London Plan 2021*. Policy SI 4, 'Managing heat risk'. London: Greater London Authority.

HM Government (2021) *Approved Document O: Overheating*. 2021 edition for use in England, incorporating 2022 corrections.

International Energy Agency (2018) *The Future of Cooling: Opportunities for energy-efficient air conditioning*. Paris: IEA.

Jones, R.V., Fuertes, A. and Charles, H. (2026) *Socio-technical drivers of air conditioning adoption and use in UK homes: Final report of the Residential Air-conditioning Demand Futures project*. Energy Demand Research Centre. doi: 10.20919/XEZA5636.

Kendon, M. et al. (2025) 'State of the UK Climate in 2024', *International Journal of Climatology*, 45(S1), e70010. doi: 10.1002/joc.70010.

Ministry of Housing, Communities and Local Government (2024) *English Housing Survey 2023 to 2024: Headline findings on demographics and household resilience*. London: MHCLG.

Ministry of Housing, Communities and Local Government (2025) *Housing supply: net additional dwellings, England: 2024 to 2025*. London: MHCLG.

Ministry of Housing, Communities and Local Government (2026) *Dwelling stock estimates, England: 31 March 2025*. London: MHCLG.

National Energy System Operator (2025) *Future Energy Scenarios 2025: Pathways to Net Zero*.

Simpson, C.H., Halai, S., Price, J., Petrou, G., Heaviside, C. and Davies, M. (2026) 'Air conditioning and the future electricity system in Great Britain', *Energy Research & Social Science*, 136, 104727. doi: 10.1016/j.erss.2026.104727.

UK Health Security Agency (2026) *Heat mortality monitoring report, England: 2025*. London: UKHSA.

World Health Organization (2018) *WHO Housing and Health Guidelines*. Geneva: World Health Organization.

Compass Works

Compass Works explores the intersection of sustainability, data and decision-making.

Through original research, practical tools and advisory services, we help organisations better understand complex systems, uncover meaningful insights and make more informed environmental decisions.

www.compass-works.com
hello@compass-works.com

PUBLICATION INFORMATION

Research and analysis led by:
Jonathan Li, Founder, Compass Works.

Published: August 2026

Publisher: Compass Works, Watford, United Kingdom

SUGGESTED CITATION

Compass Works (2026) *Rethinking Domestic Cooling: Climate adaptation, access and systems thinking beyond the binary AC debate*. Discussion Paper CWI-002. Watford: Compass Works.

Disclaimer — This publication is provided for general discussion and information. It does not constitute building-design, engineering, medical, legal or investment advice. Building conditions, technical systems and household needs should be assessed on their specific circumstances, with professional advice obtained where appropriate.