

Mainstreaming Climate Resilience: New Innovations, Disruptive Thinking & Future Policy

Chaired by Jo Hills – Associate Director, Disruptive Innovators Network

- Polly Turton – Head of Climate Action & Public Health, Shade the UK
- Vince House – Head of Sales and Development, Aereco
- Cat Moncrieff – Head of Policy & Engagement, CIWEM
- Becci Taylor – Director, Arup
- Elaine Toogood – Senior Director, The Concrete Centre



Welcome from session chair

Jo Hills – Associate Director,
Disruptive Innovators Network



**Disruptive
Innovators
Network**



The Climate Resilience Challenge

Shade - a good place to start

Polly Turton

Head of Climate Action and Public Health, Shade the UK

THE PROBLEM

Temperatures are rising in the UK because of climate change

Health and wellbeing is suffering and vulnerable people are dying

There isn't sufficient awareness of the harmful impacts from overheating in the UK.



We don't have the right existing physical infrastructure to protect vulnerable people during hot weather.

Public spaces are not safe nor accessible for all during heatwaves.



SHADE THE UK

HOW WE PLAN ON SOLVING IT



THE OUTCOME

The UK has the knowledge and tools to deal with prolonged hot weather to protect themselves and others.



UK buildings do not dangerously overheat.



There are safe public spaces for all to equitably access and enjoy during hot weather.



Zero deaths from overheating in the UK

The health and wellbeing of vulnerable people is safeguarded during hot weather.

OUR THEORY OF CHANGE

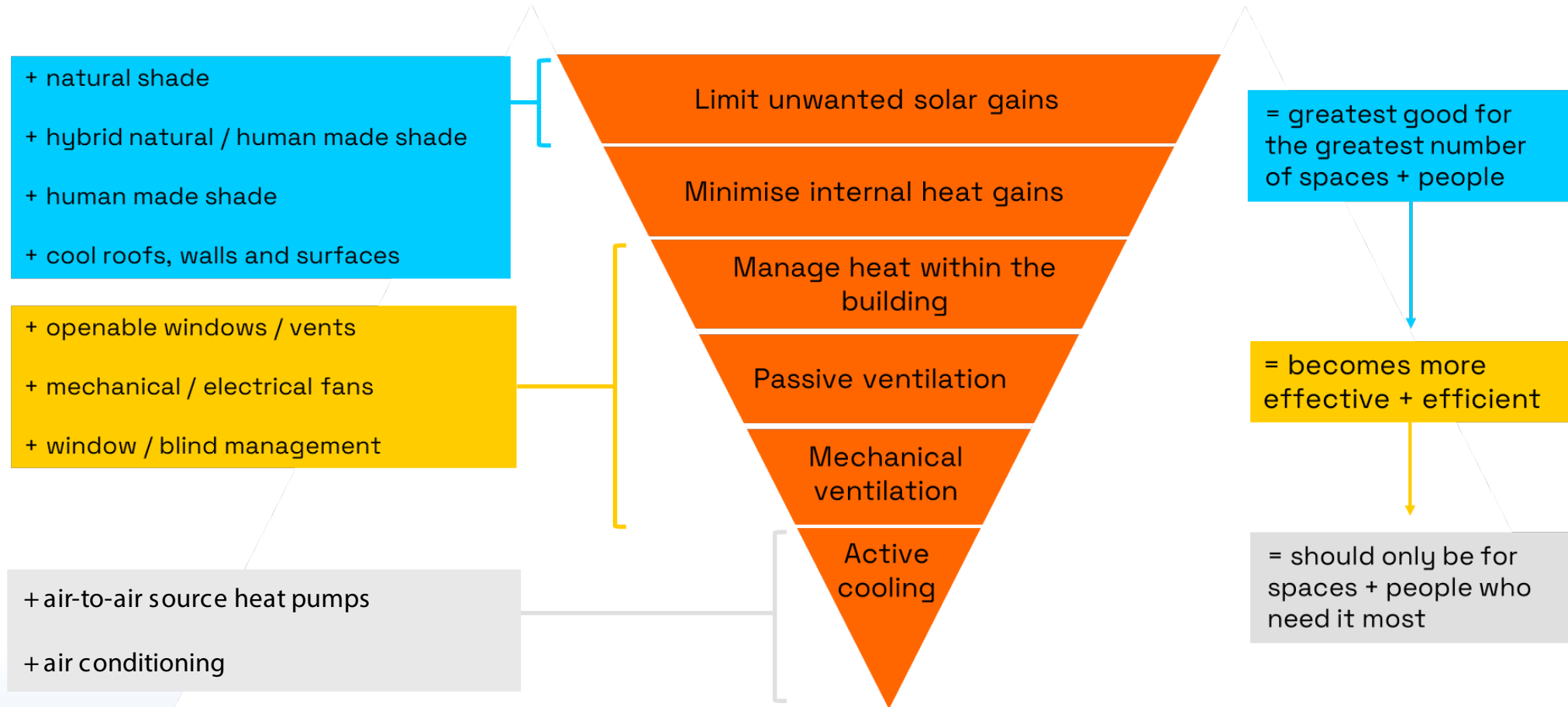
© Shade the UK 2023



*“Shade was once a
staple of human
civilisation”*

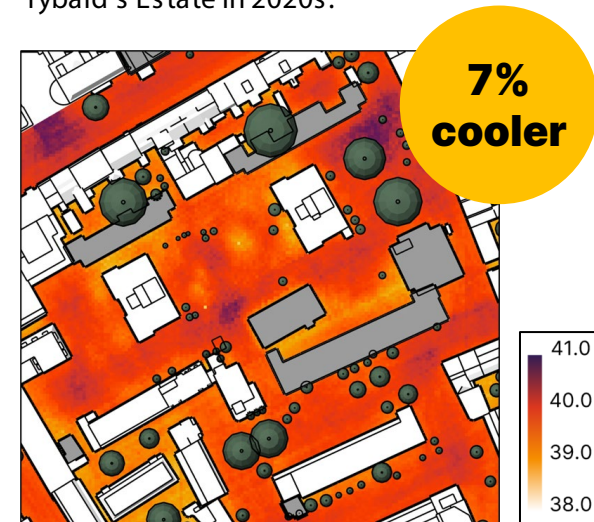
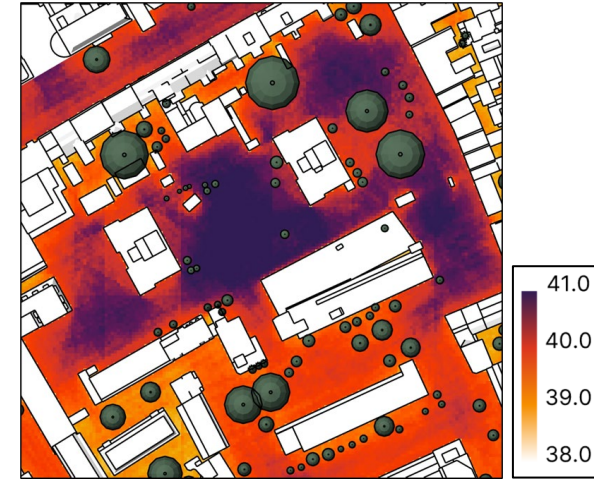
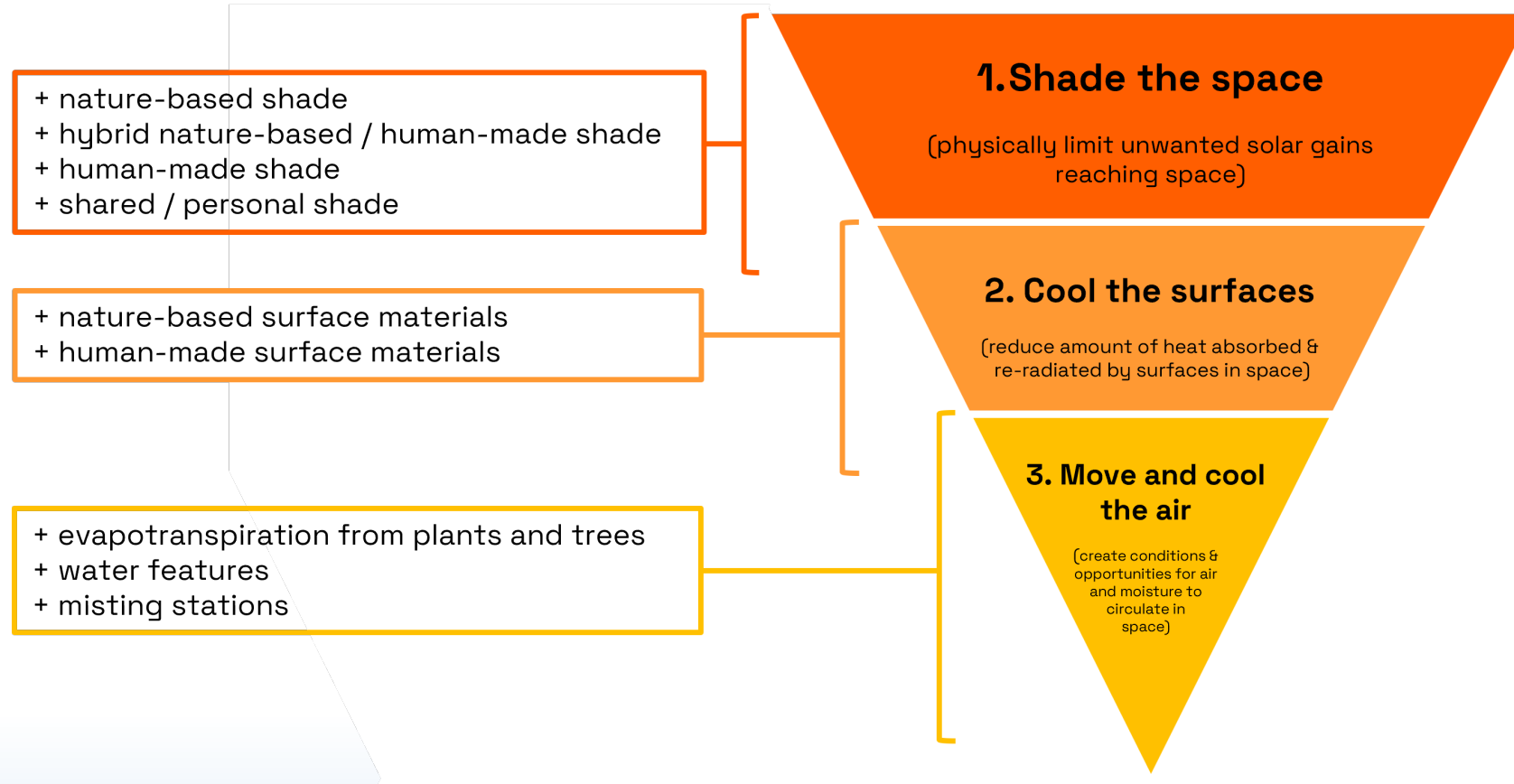
The Great Indoors

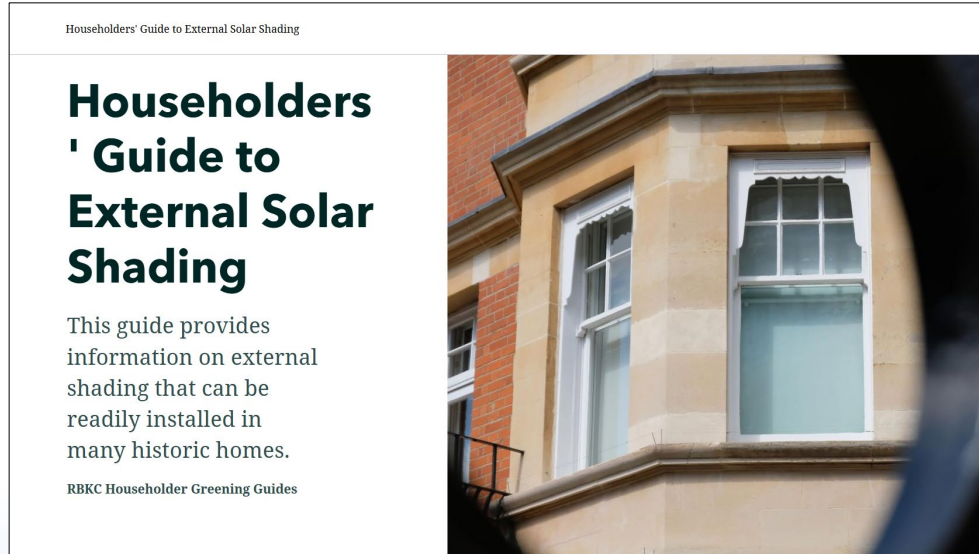
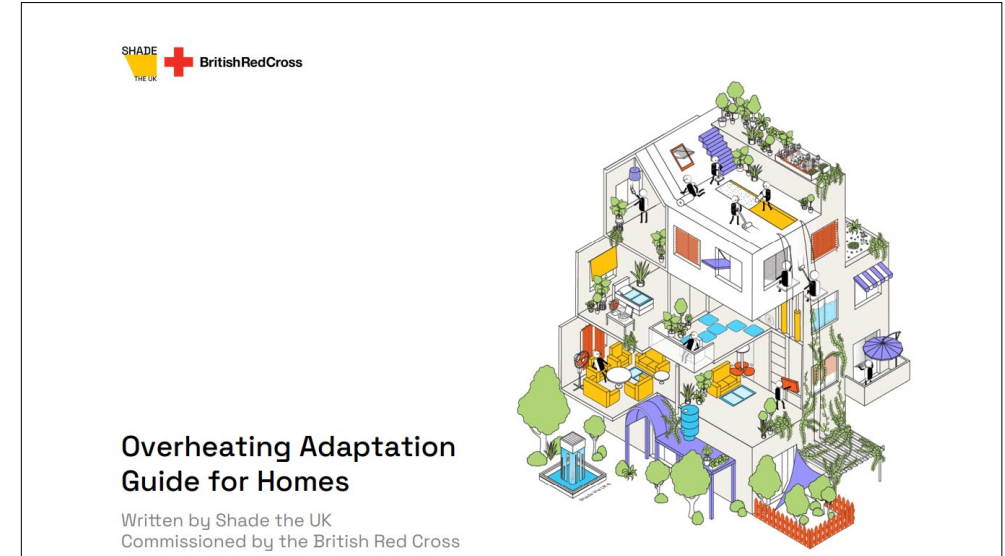
Cooling Hierarchy for Internal Spaces (London Plan)



The Great Outdoors

Thermal Comfort Hierarchy for External Spaces (Shade the UK)
Holborn Liveable Neighbourhood, Heat Resilience Study





Warm Homes (not Hot Homes)

Year-Round Comfort and Performance



The Future

- Building upgrades must deliver year-round comfort, not just winter warmth
- New methodology for assessing building fabric performance within Energy Performance Certificates (EPCs) to provide insight on overheating risk
- Embed appropriate and cost-effective passive cooling measures into funding schemes targeting low-income households and social housing
- Active cooling via air-to air heat pumps where and when needed

Call to Action

- Let's get on with it!
- More collaboration and implementation = the innovation and disruption needed
- More integration of nature-based solutions not just human-made solutions
- More consideration of the spaces outside our homes as well as inside our homes

Shade - a good place to end

polly.turton@shadetheuk.co.uk



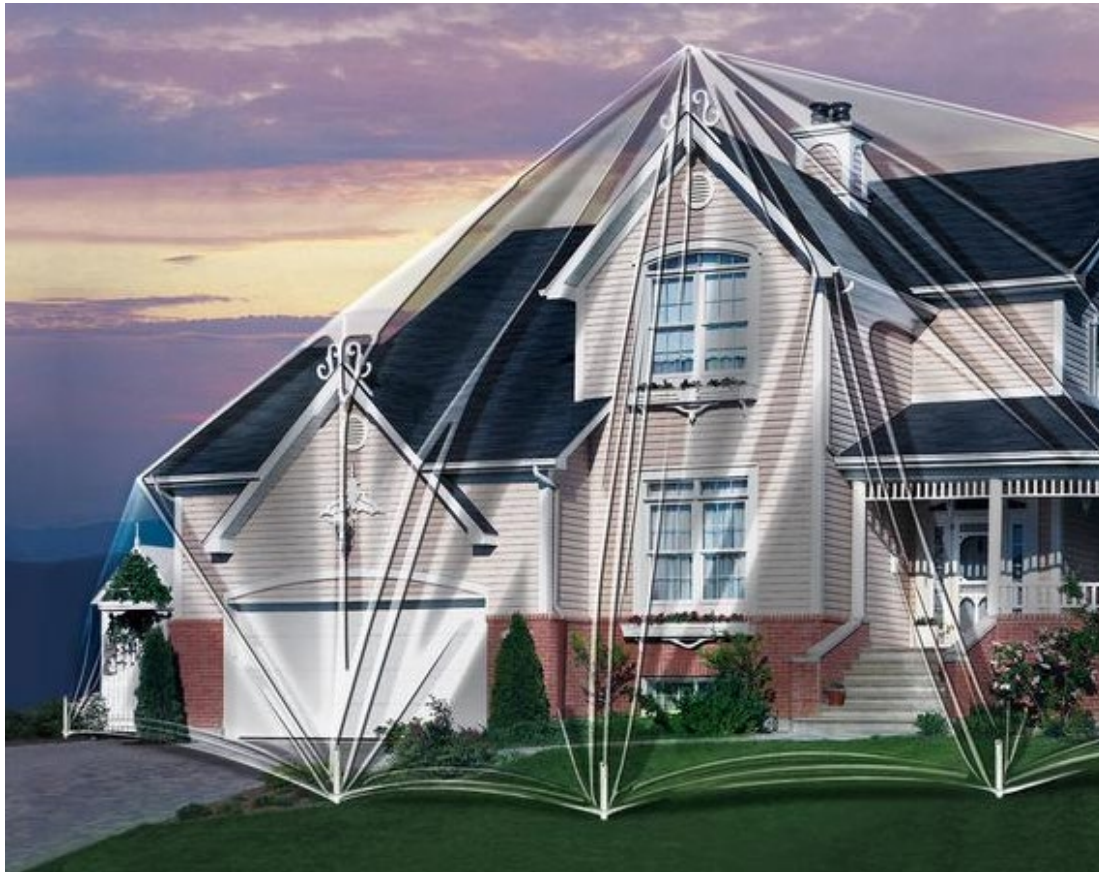
AERECO

ALDES GROUP

Demand Controlled Ventilation

Vince House, Head of Sales & Operations, Aereco

Why do we need Ventilation?



We are making properties much more energy efficient, through legislation and retro-fit measures

Excess Moisture can lead to mould in our homes

We are spending on average 90% of our time in our homes

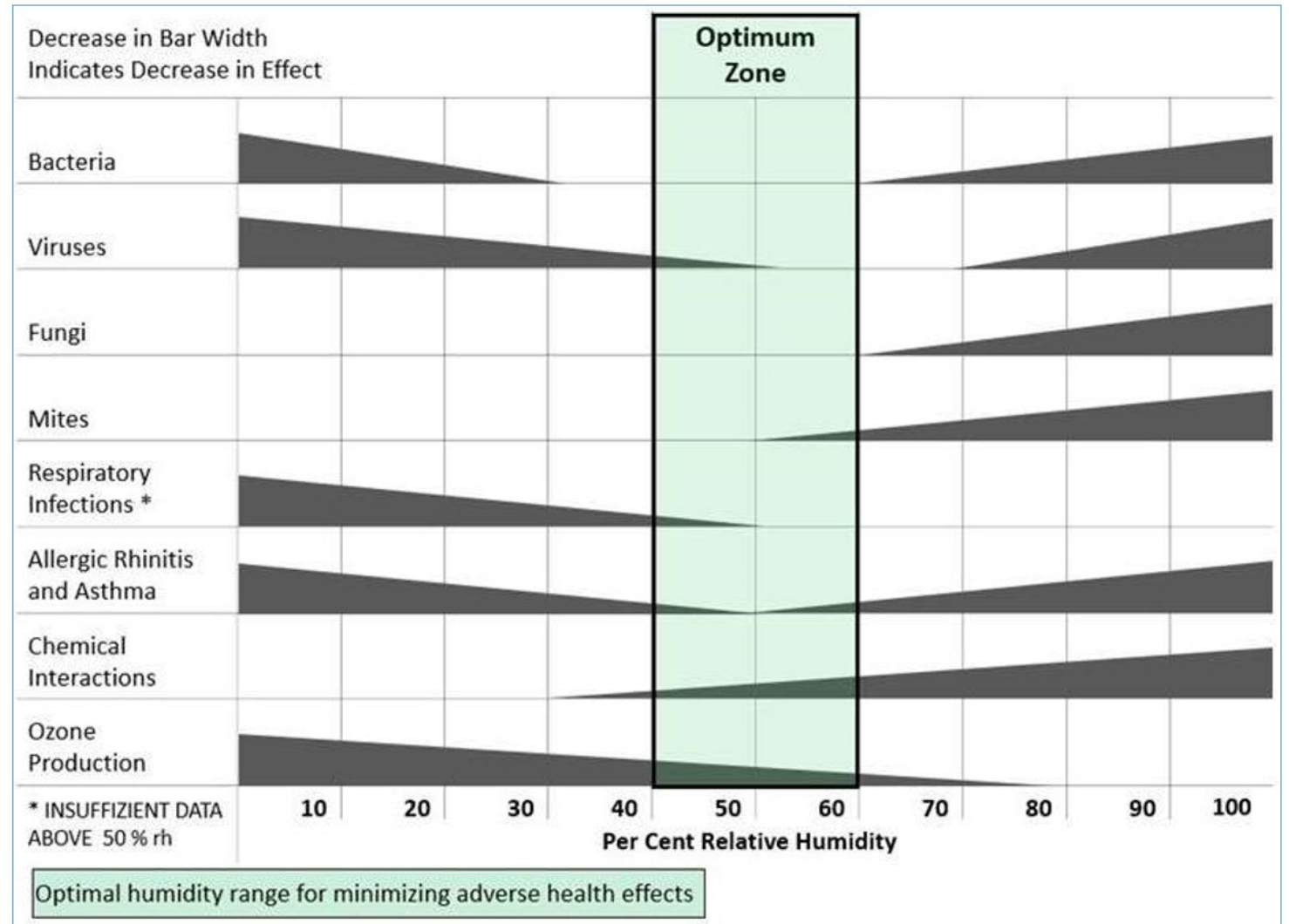
A family of 4 will typically produce 16 litres of moisture every day

The air inside our homes can be up to 5 times more polluting than the air outside

It is known to be a major risk factor for childhood asthma.

What does good look like?

- Healthy homes do not suffer with high levels of humidity – excess moisture
- Maintaining the optimum RH range is important for the health of occupants and the building
- Pro-longed periods of 65%+ RH will result in Mould growth and also an increase in Mite population



Criteria for Human Exposure to Humidity in Occupied Buildings – E.M. Sterling A.Arundel T.D.Sterling, Ph.D.

Demand Controlled Ventilation in action



- Energiesprong UK
- Nottingham Homes
- 10 Pilot Properties
- Hard to heat homes
- KPI's to be met for 30 Years
- Contractor (Melius Homes) responsible throughout
- Near Net Zero
- DCV used
- Studio Partington

Future of Ventilation

- Dynamic systems which can measure the need for ventilation and modulate airflows according to the needs of the building based on the activities of the occupants. Demand Controlled Ventilation.
- This provides energy savings when there is low occupancy in the property.
- It also means ventilation rates can be higher (exceeding Part F) when the requirement is necessary. Maintaining the correct moisture levels.
- IOT – Identifying issues, proving efficacy
- Integrated heat pumps for Hot Water Generation

Call to Action

- We are on a journey to Net Zero and carbon is the one focus which is being measured.
- In parallel to this we also need to make sure properties are Healthy for everyone who lives inside.
- At the moment there is no policy for IAQ and the NHS bear the brunt of this cost with Asthma and COPD cases.



The case for 'water smart' homes

Cat Moncrieff

CIWEM and 'Enabling Water Smart Communities' project

CIWEM Chartered Institution of
Water and Environmental
Management



Water smart communities manage water as an integrated system.

An aerial illustration of a water smart community. It features several blue houses with solar panels on their roofs. A winding blue stream flows through the landscape, which is dotted with green trees. A road with a dashed white line runs diagonally across the scene, with a few cars (orange and blue) driving on it. In the foreground, there's a modern building with a green roof and orange pipes. People are shown walking along a path and sitting on a bench. The overall scene depicts a sustainable, integrated water management system.

Water
efficient &
recycling

Nature-based
solutions

Spongy:
rainfall as a
resource

Community
empowered

Why we need 'water smart' homes



**>4.8
billion
litres/day
deficit by
2050**

**1.5 million
new homes
in this
parliament**



**>60,000
homes could
be delayed in
south & east
due water
scarcity**

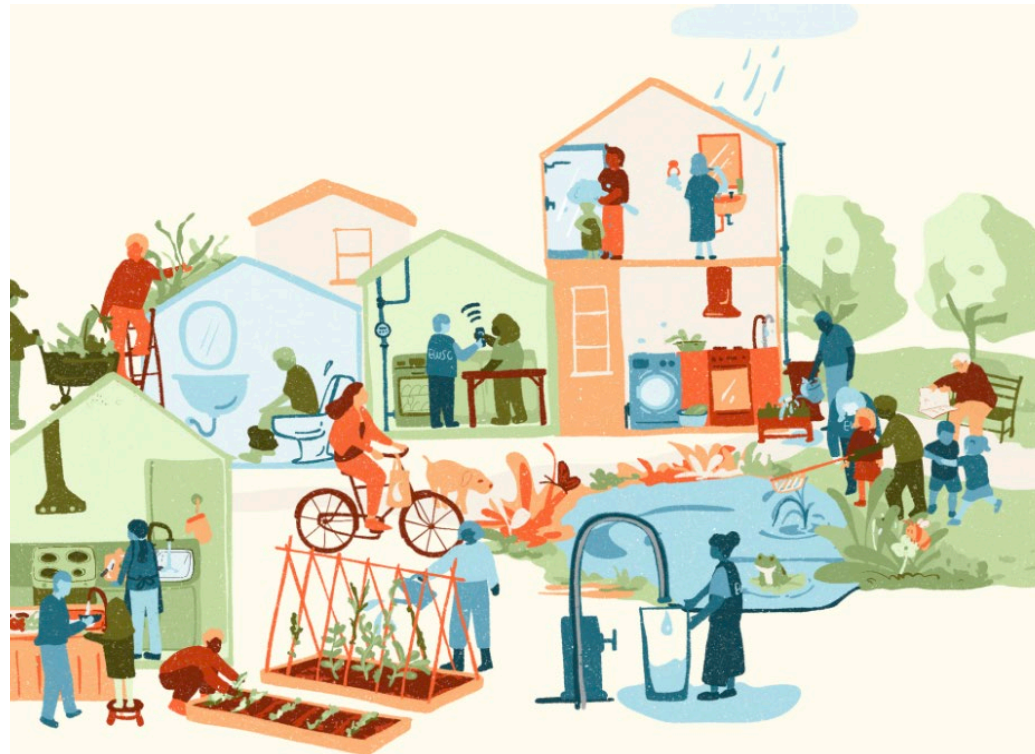
**8 million
properties at
risk of flooding
by 2050
(1 in 4)**

**30,000
homes
delayed by
inadequate
sewage
infrast.
(HBF)**

The benefits of water smart homes

Unlocking housing development

Building 'water smart' homes (30% more efficient) would help unlock housing delivery in water scarce areas



Public attitudes

Public (& professional) support for alternative water systems

80% willing to use rainwater for WCs

Public value green spaces and clean air & water very highly

63% of younger/future homebuyers would pay more to live in a development with SuDS.

Developer benefits

'SuDS premium' of ~£4k per property, and premium associated with a climate-resilient garden £2-£10k

High quality SuDS have a reduced land take

Cost of community rainwater recycling ~£1.8k per plot

Social & environmental benefits

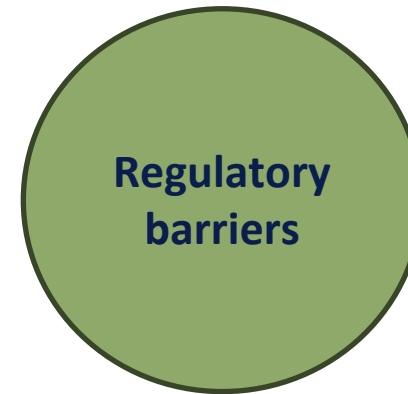
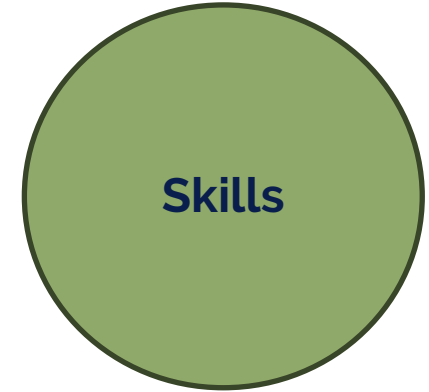
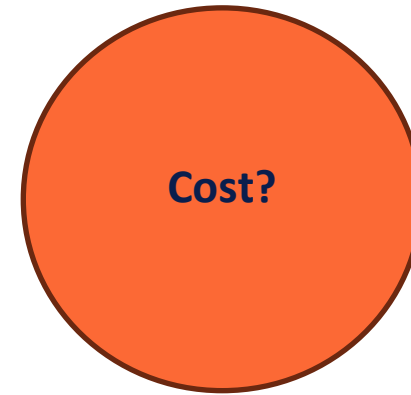
High quality SuDS deliver 6x the benefit over more conventional drainage

SuDS reduce flood risk AND provide an additional £247 million/year in amenity, air & water quality, and water resources benefits (1.3 million new homes)

The future: water smart homes are the norm



We're addressing the barriers....



EW SC: supporting the delivery of water smart homes...

The 'Enabling Water Smart Communities (EWSC) project has generated numerous outputs that support the delivery of water smart homes.

"...the evidence gathered through the **Enabling Water Smart Communities** project is valuable in terms of demonstrating the need for water efficiency measures including on-site water re-use." – Minister Emma Hardy (June '25)

Tranche 1a		
Business Case for Water Reuse (Capex Only)	Complete & Comm'ed	✓
Roadmap to Reuse	Complete & Comm'ed	✓
Stewardship – Research & Blueprint	Complete & Comm'ed	✓
Single Source of Truth	Complete & Comm'ed	✓
Wholesome Water Consultation.	On Hold	⏸
Case Study Database	Complete & on website	✓
IWMS Report & Exemplar	Complete & comms in dev.	✓
Southbank Deep Dive – Lessons Learnt	In dev.	★
Tower Hamlets Deep Dive	Data collection in progress.	★
Anchor Institutes – Environmental Incentives	Complete & comms in dev.	✓

Tranche 1b		
Green Financing	Complete & Comm'ed	✓
Skills Scoping Report	Complete & Comm'ed	✓
GHA Guidance to Water Efficient Homes	Complete & Comm'ed	✓
Reclaimed Water Safety Plan Template	On Hold (DWI)	⏸
Impact on Sewer Network	Complete & comm'ed.	✓
Climate resilient Gardens	Complete & Comm'ed.	✓
Economic Modelling & IWM Impact	Complete & Comm'ed.	✓

Research Projects		
UoM – Understanding public and professional perspectives on the future of water and housing.	Complete & Comm'ed	✓
UEA – Understanding how alternative water and sewer supply systems shape the meaning and value of water.	Complete & Comm'ed	✓

Tranche 2		
Whole Life Costing (water reuse inc carbon)	In delivery	★
Environmental Incentives Pt2	Complete & comms in dev	✓
Cost Benefits Analysis of High Quality SuDS vs Traditional.	Complete & Comms in dev	✓
Establishing a case for High Quality SuDS	Complete & Comms in dev	✓
Stewardship 2.0	In delivery	★
Ledger Tech Pt 1	Complete & Comm'ed	✓
Ledger Tech Pt 2 & 3	In delivery	★
Designing Low Demand Water Networks.	In delivery	★

Project cited within multiple publications:

GOVERNMENT & PUBLIC SECTOR JOURNAL

THE **UK WATER REPORT**
POLICY | REGULATION | FINANCE

UtilityWeek

ENDS REPORT

HOUSING TODAY

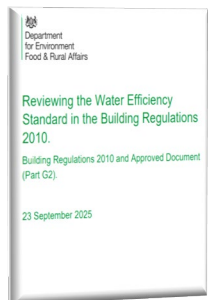
CONSTRUCTION MANAGEMENT
Brought to you by CIOB

edie
driving sustainable business.

The Environment
THE MAGAZINE FOR THE CHARITRED INSTITUTION OF WATER AND ENVIRONMENTAL MANAGEMENT

BusinessGreen™

Smart Cities World



What needs to happen next?

Government:

Signal intent to progress reuse in homes
Fix 'wholesome water' rules
Establish clear mechanism for asset stewardship

Developers & Master Planners:

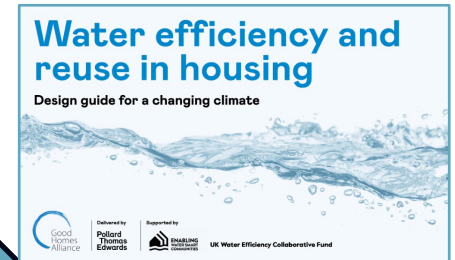
Recognise the benefit of water smart features
Consider integration from the start

Architects and designers:

Recognise place-making value of water smart design
Adopt 'water smart' approaches in design >> GHA guide

Water industry:

Standardise and promote environmental incentives





Join the water smart community

Learn-share-progress

Project Delivery Team



Independent Programme Board

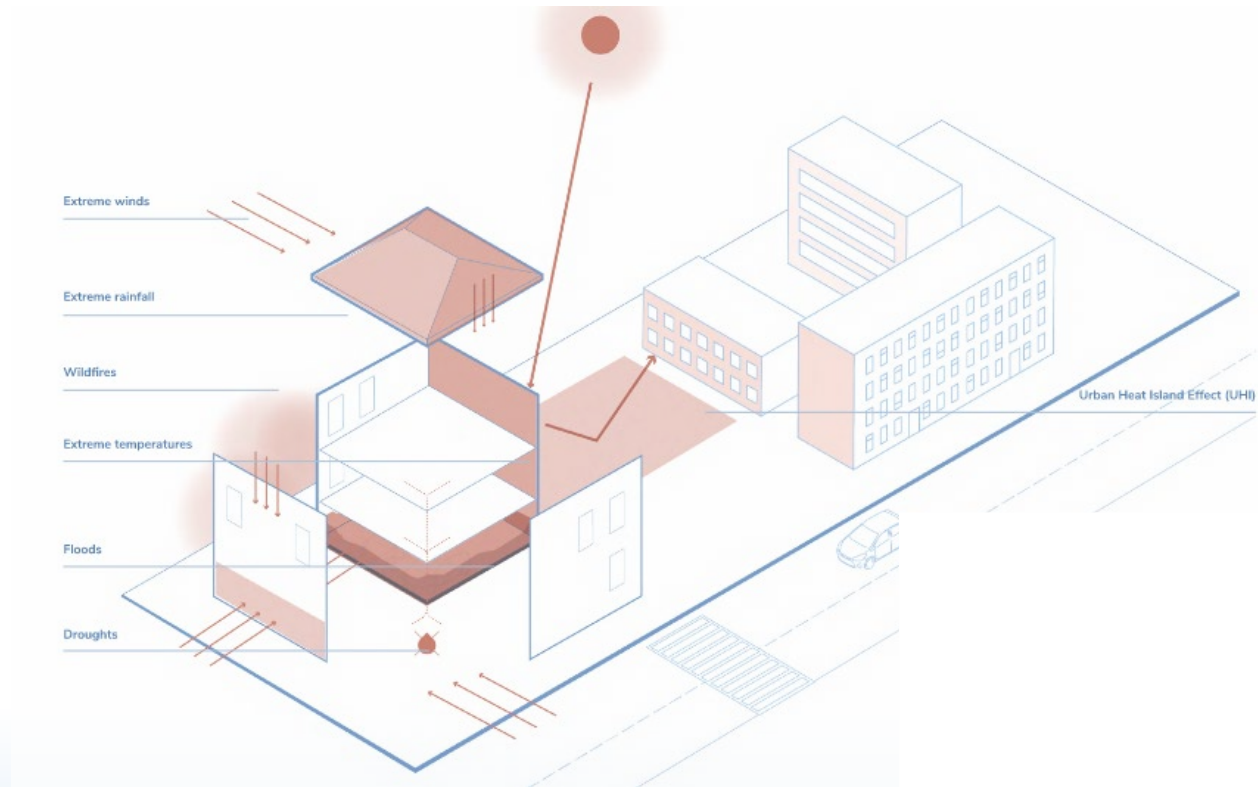


www.ewsc.org.uk



Retrofitting for Climate Resilience: A national mission

Becci Taylor, Director, Arup

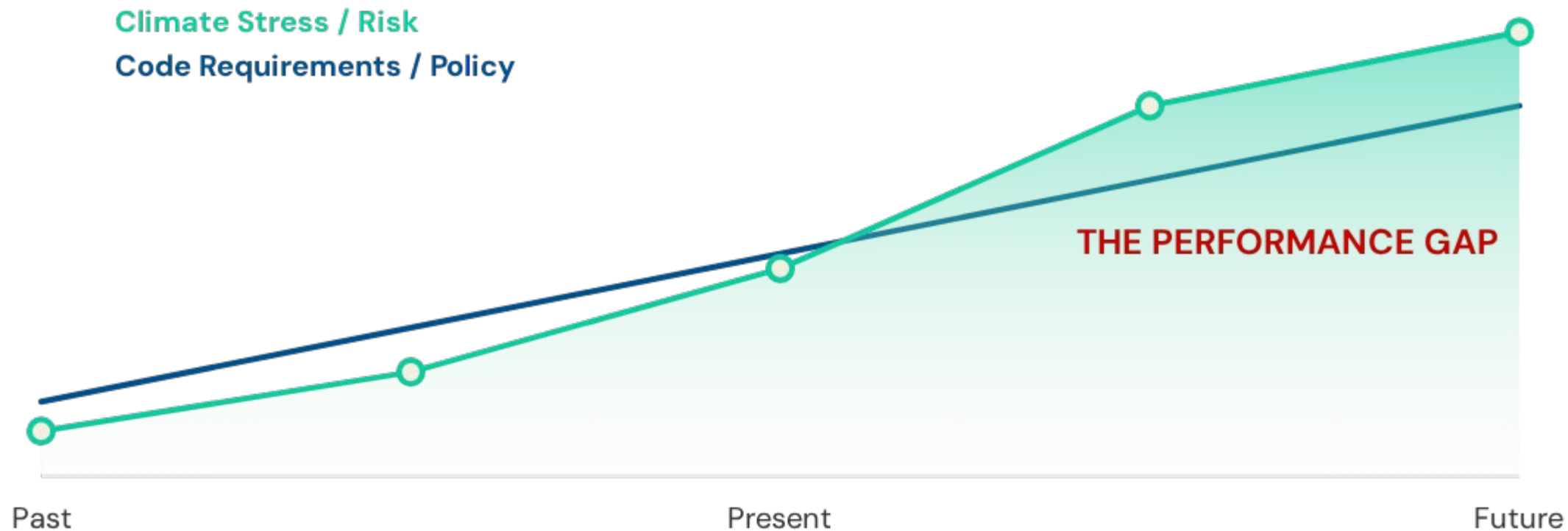


Why adaptation retrofit underpins resilience

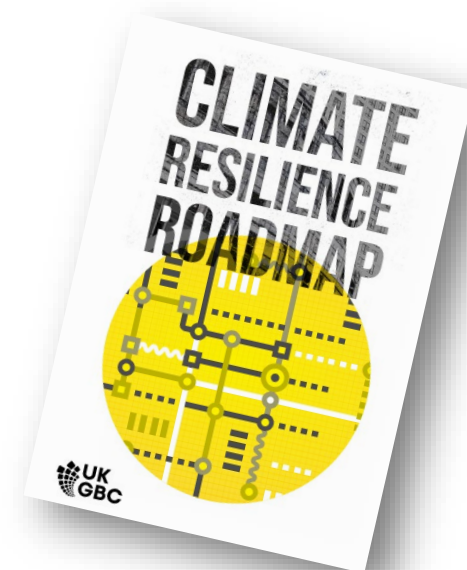
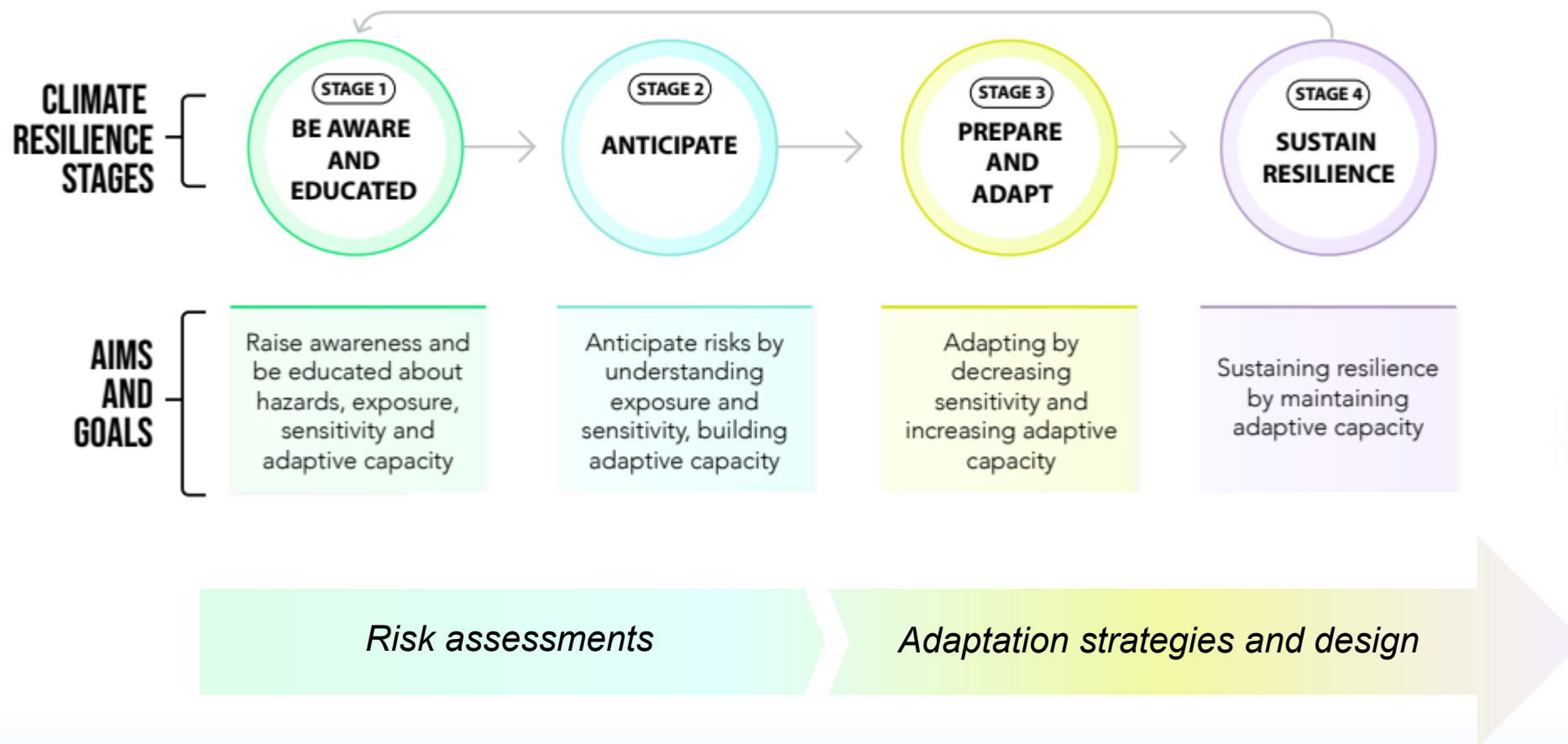
		+1.1°C Today	+1.5°C	+2°C	+4°C
Temperature Hottest day in a decade (+°C)		+1.2°C (+0.7 to 1.5°C)	+1.9°C (+1.3 to 2.3°C)	+2.6°C (+1.8 to 3.1°C)	+5.1°C (+4.3 to 5.8°C)
Drought A drought that used to occur once in a decade now may happen X times more often		x1.7 (x0.7 to 4.1)	x2.0 (x1.0 to 5.1)	x2.4 (+1.3 to 5.8)	x4.1 (x1.7 to 7.2)
Precipitation What used to be a wettest day in a decade now may happen X times more often		x1.3 (x1.2 to 1.4)	x1.5 (x1.4 to 1.7)	x1.7 (x1.6 to 2.0)	x2.7 (x2.3 to 3.6)
Snow Snow cover extent change (%)		-1% (-3 to 1%)	-5% (-7 to 2%)	-9% (-13 to 2%)	-26% (-35 to -15%)
Tropical cyclones Proportion of intense tropical cyclones (%)			+10%	+13%	+30%

- Impact reduction
- Investment protection and risk transfer
- Regulatory readiness

Ahead of compliance...



Climate-resilient retrofit must start with risk





Heat risk at scale

Policy and planning





Housing Association

Scaling climate risk screening across 30,000 homes



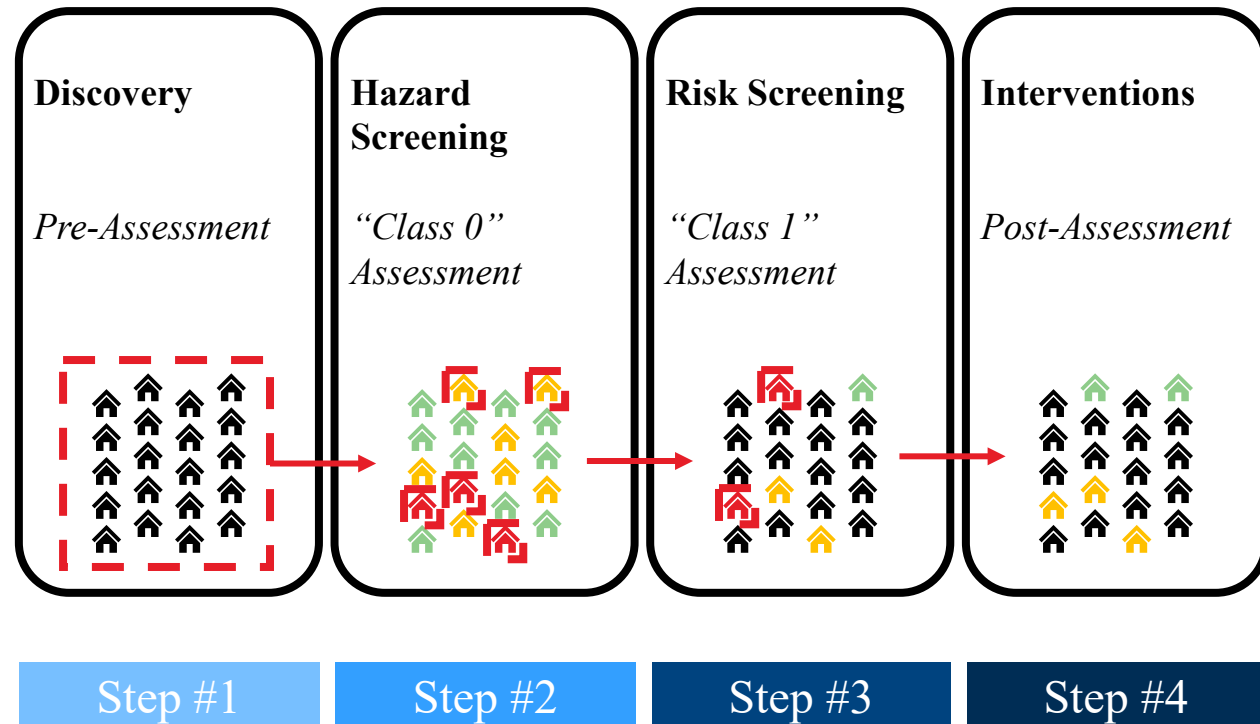
Surface Water: 1-in-1,000yr



Surface Water: 1-in-100yr

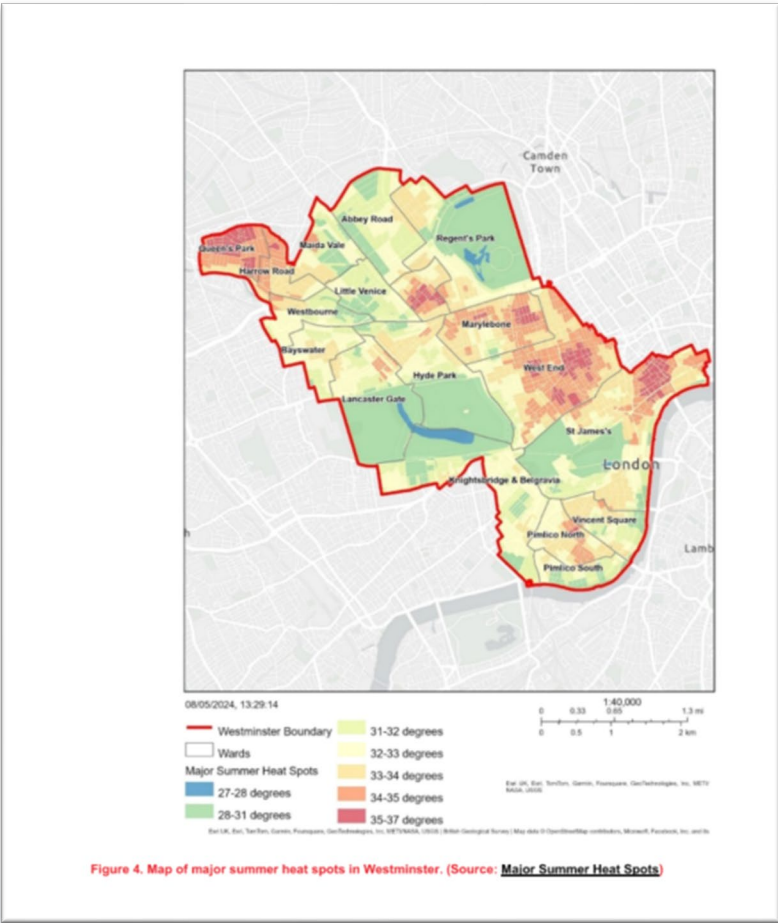


Surface Water: 1-in-30yr



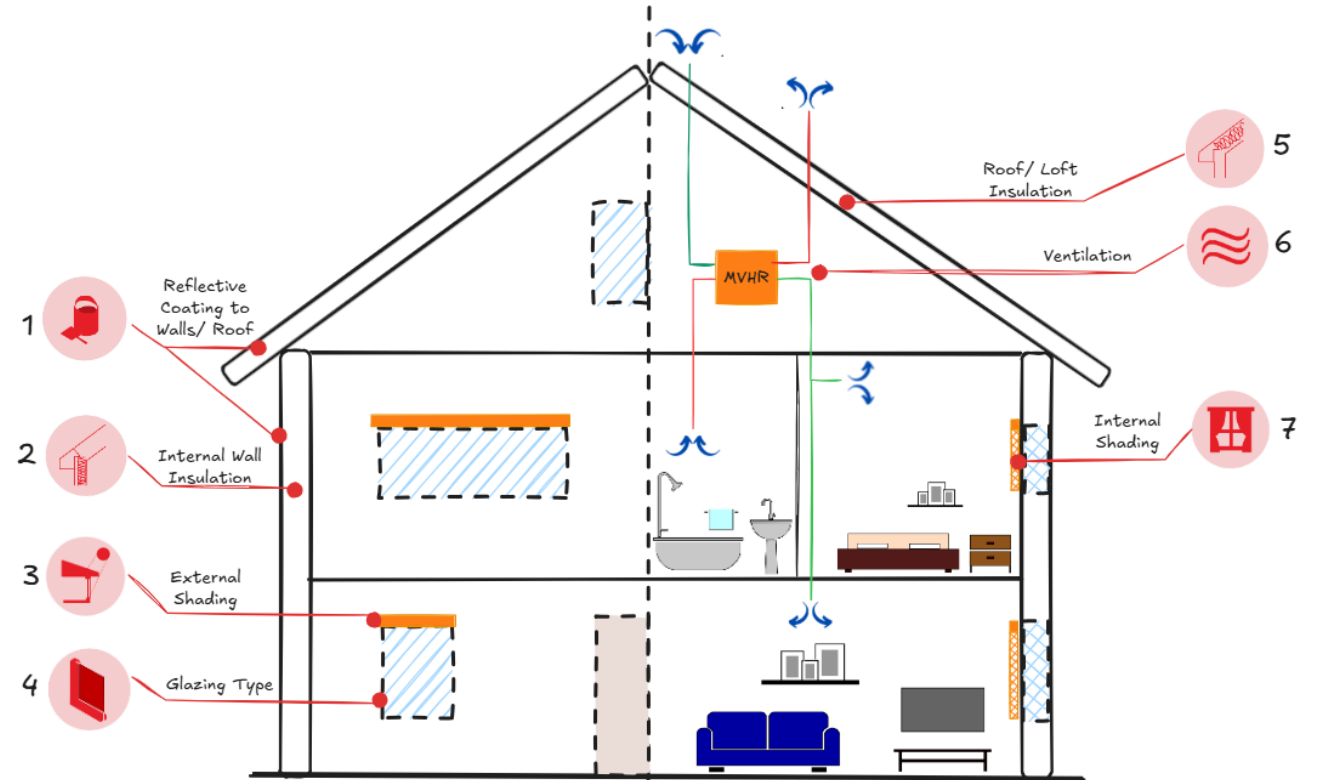
Westminster City Council

Embedding climate risk into Westminster's city planning



From risk to retrofit decisions

Embedding overheating risk into housing association retrofit decision-making



Building climate resilience in schools

GLA live programme

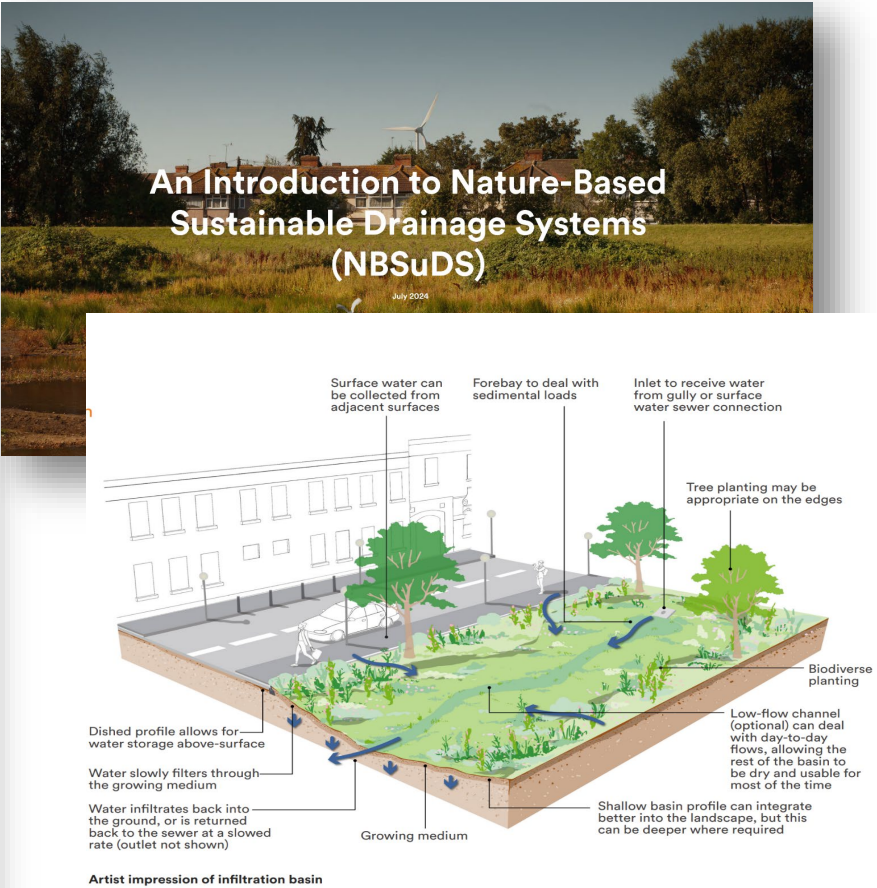
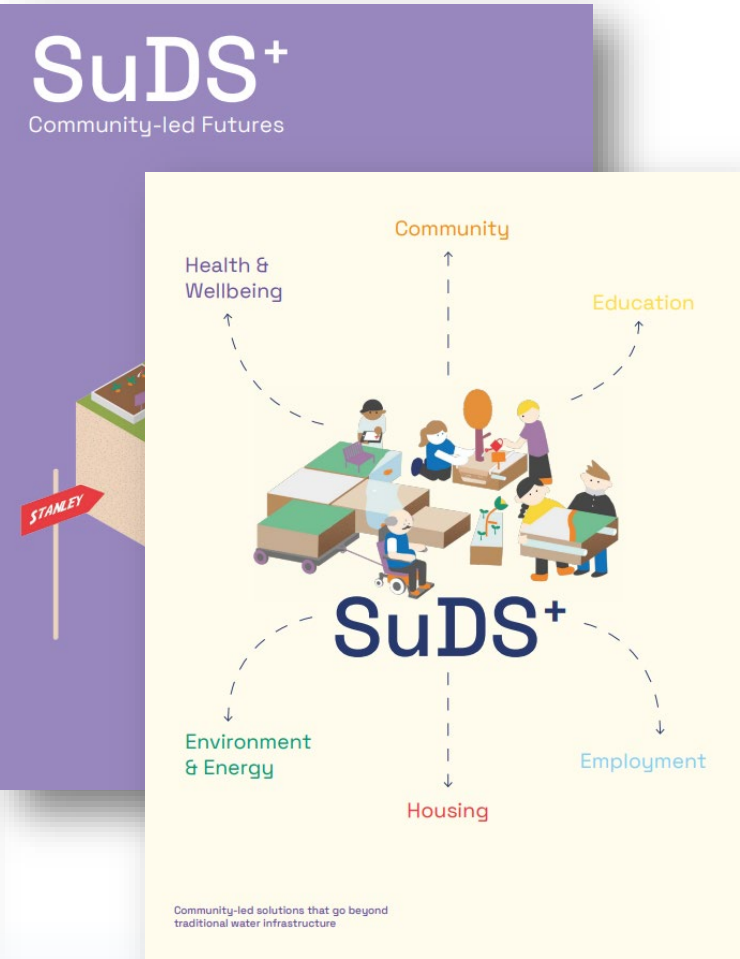
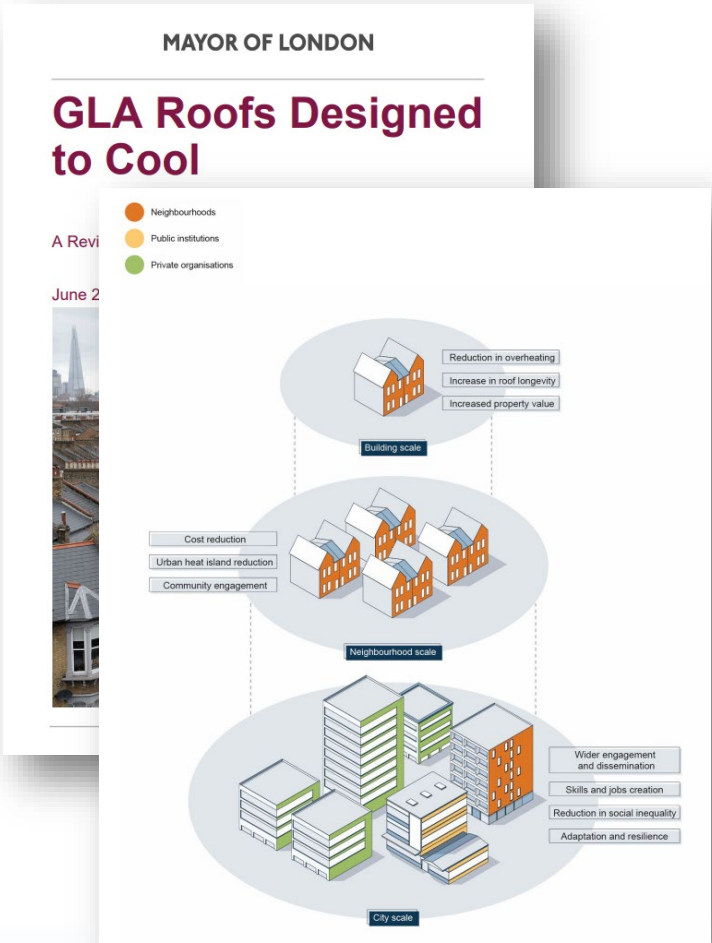
STAGE 3
PREPARE
AND
ADAPT

STAGE 4
SUSTAIN
RESILIENCE



Good Homes - Beyond Net Zero, 28/01/2026, London

Neighbourhoods: where benefits compound



One retrofit agenda: mitigation, adaptation, health

Coherent, risk-based retrofit



Mitigation

Reducing impact on the
environment
(net zero, nature- positive)

Sustainability



Adaptation

Withstanding physical climate stress
(heat, storms, flooding, water stress)

Resilience



Reconciliation

Delivering together

Health, safety

Up front (early stage) thinking

Elaine Toogood, Senior Director, Concrete, MPA
The Concrete Centre

“The evidence shows that we must do more to build climate change into any decisions that have long-term effects, such as in new housing or infrastructure, to avoid often costly remedial actions in the future.”

[UK Climate Change Risk Assessment 2022 - GOV.UK](#) -

“The need to mitigate and adapt to climate change should also be considered in preparing and assessing planning applications, taking into account the full range of potential climate change impacts.”

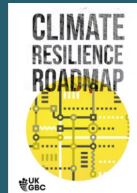
National Planning Policy Framework (NPPF) 2024

‘the total cost of climate change damages to the UK are projected to increase from 1.1% of GDP at present to 3.3% by 2050 and 7.4% by 2100’

[What will climate change cost the UK?](#)

The Grantham Research Institute on Climate Change and the Environment, 2022

- Climate change is already costing lives and more will be lost without urgent action
- Five major hazards threaten the UK and must be treated as a national emergency
- These hazards are interconnected and our response must match
- Buildings are our first line of defence
- Acting now is the only responsible choice

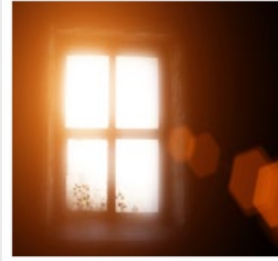


<https://ukgbc.org/our-work/topics/resilience-roadmap/>



Flooding: 'In England 6.3M buildings at risk of flooding. This could raise to 8M by 2050, that is 1 in 4 homes.'

(Env. Agency)



Overheating: 'Since 2016, approximately 570,000 new homes have been built in England without adequate adaptations to respond to increased temperatures.'

(TCPA, 2024).



Drought: 'If no action is taken by 2050, England's public water supply will face a shortfall of 5 billion litres of water every day.' (The London Climate Resilience review, 2024)



Storms: 'There is evidence that global warming is making the most powerful storms more intense' (UK and Global extreme events – Wind storms," Met Office)



Wildfires: 'The largest number of wildfire incidents in the UK do occur in close proximity to built-up areas.....they present a significant threat to life, health, buildings, and infrastructure' (UK Wildfires and their Climate Challenges, 2021)

'In the UK, the risk of a fire starting is projected to double with 2°C' (UK Climate Risk – Wild Fire briefings 2022)



Derwent Thorpe, Studio Partington,
Joseph Rowntree Housing Trust



Bridget Joyce Square, London.
Robert Bray Associates.

- Risks vary according to development type, local and wider context
- Strategic, site-specific, tailored solutions are essential based on many factors including consideration of microclimate, landscape orientation, flood risk, noise, air and pollution
- Nature-based solutions, spongier cities, SuDs. All with the opportunity to enhance site characteristics and potential co-benefits of flood resilience, shading, reduction in heat island effect, social amenity and support for biodiversity
- Wide range of permeable concrete paving, drainage and other SuDs products are part of the strategic solution



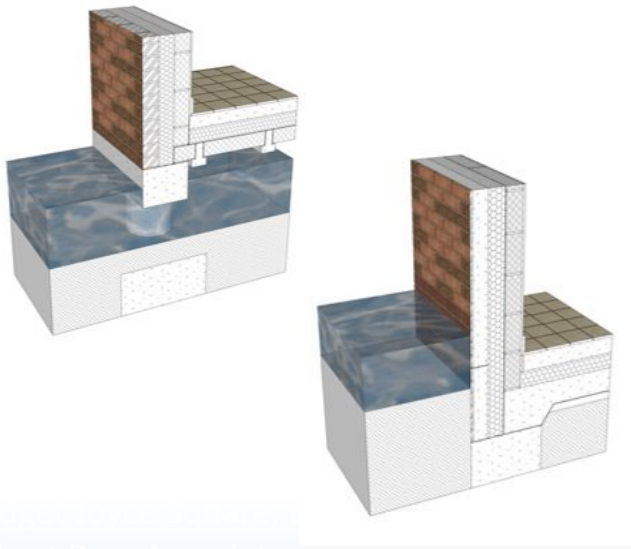


Nottingham Community Housing Association
/Moorbridge Developments Ltd.

Gas Street, Sandiacre – Property Level Flood Resilience in new build social housing

- 53 homes on a brownfield site, within Flood Zone 2.
- Fabric first approach, EPC A –rated using brick and block cavity walls.
- Flood resilience built into the design from the outset.
- This included raising floor levels, installing permeable paving self-closing air bricks
- The total cost of adding these PFR measures per plot was less than £1,200.
- These interventions are designed to enhance the resistance of properties to flooding and to support quicker recovery afterwards.

(Case study 2 : FloodReady, An action plan to build the resilience of people and properties, DEFRA, 2025)



- In BS 85500:2025 Flood resilient construction – improving the flood performance of buildings guide all recommended solutions for walls and floors are masonry or concrete (benefits includes structural integrity in and after flood events)
- Additional performance benefits of a concrete or masonry structure include:
 - Thermal mass – with night-time cooling can provide effective passive cooling
 - Non-combustibility

Robert Bray Associates.

C3 Minimising climate risks

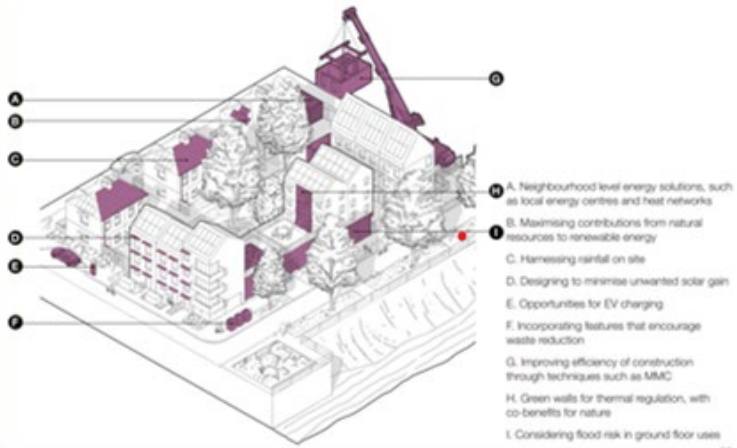
65. Liveable places are resilient to climate change by being prepared for current and future hazards, risks and impacts. Proposals for new development should address temperature extremes, increased flood and wildfire risks, and intense weather events such as rainstorms, droughts and heatwaves.

66. Buildings and infrastructure need to respond to current and forecast climate conditions by withstanding changes in climate and reducing harm from climate impacts to promote longevity in the built environment.

67. New development should be resilient to climate risks (for example extreme weather events) throughout its lifetime. Climate risk reduction measures should follow this hierarchy:

1. Avoid risk where possible.
2. Reduce risk if not.
3. Compensate as a last resort.

Fig 14 A place that reduces emissions and responds to climate challenges



Draft Design and Placemaking Planning Practice Guidance, MHCLG Jan 2026

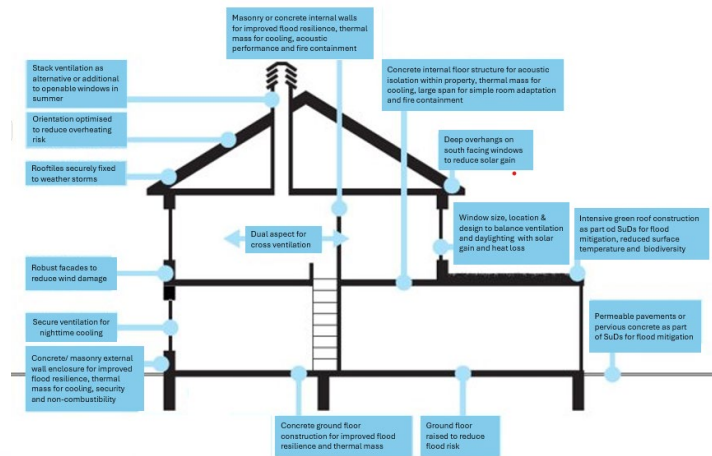
‘Research by the TC PA demonstrates that the planning system is not acting as an effective safeguard to secure flood resilience measures, which can ‘fall through the net’ of regulation due to procedural weaknesses and resource challenges’
The Climate Crisis: A guide for local authorities on planning for climate change (TC PA, 2023)

“The UK’s preparations for climate change are inadequate.”

“Delivery of effective adaptation remains limited”

“Planning for adaptation continues to be piecemeal and disjointed”

Progress in adapting to climate change – Climate Change Committee 2025 report to Parliament



The Concrete Centre climate resilience house (WIP)



- Flood and overheating performance certificates should help mainstream resilience
- Use of climate-resilient structures is essential to embed resilience and facilitate future adaptation

Mainstreaming Climate Resilience

Panel discussion

Chaired by Jo Hills – Associate Director, Disruptive Innovators Network

- Polly Turton – Head of Climate Action & Public Health, Shade the UK
- Vince House – Head of Sales and Development, Aereco
- Cat Moncrieff – Head of Policy & Engagement, CIWEM
- Becci Taylor – Director, Arup
- Elaine Toogood – Senior Director, The Concrete Centre



What do you need in order to implement climate resilient approaches/solutions at scale? For example guidance, training, funding, policy





Mid-afternoon break – please visit
our event partners and exhibitors

Return for our next session at
15:30

Sponsored by



Data, AI and Building Performance

Chaired by Prof. Dave Glew – Leeds Beckett University

- Gwenaël Jerrett – Design Principal, London Legacy Development Corporation
- Barry Lynham – Managing Director, Knauf Energy Solutions
- Jenny Danson – Founder and CEO, Healthy Homes Hub
- Joseph Daniels – Co-Founder, Senze



CHOBHAM MANOR POE

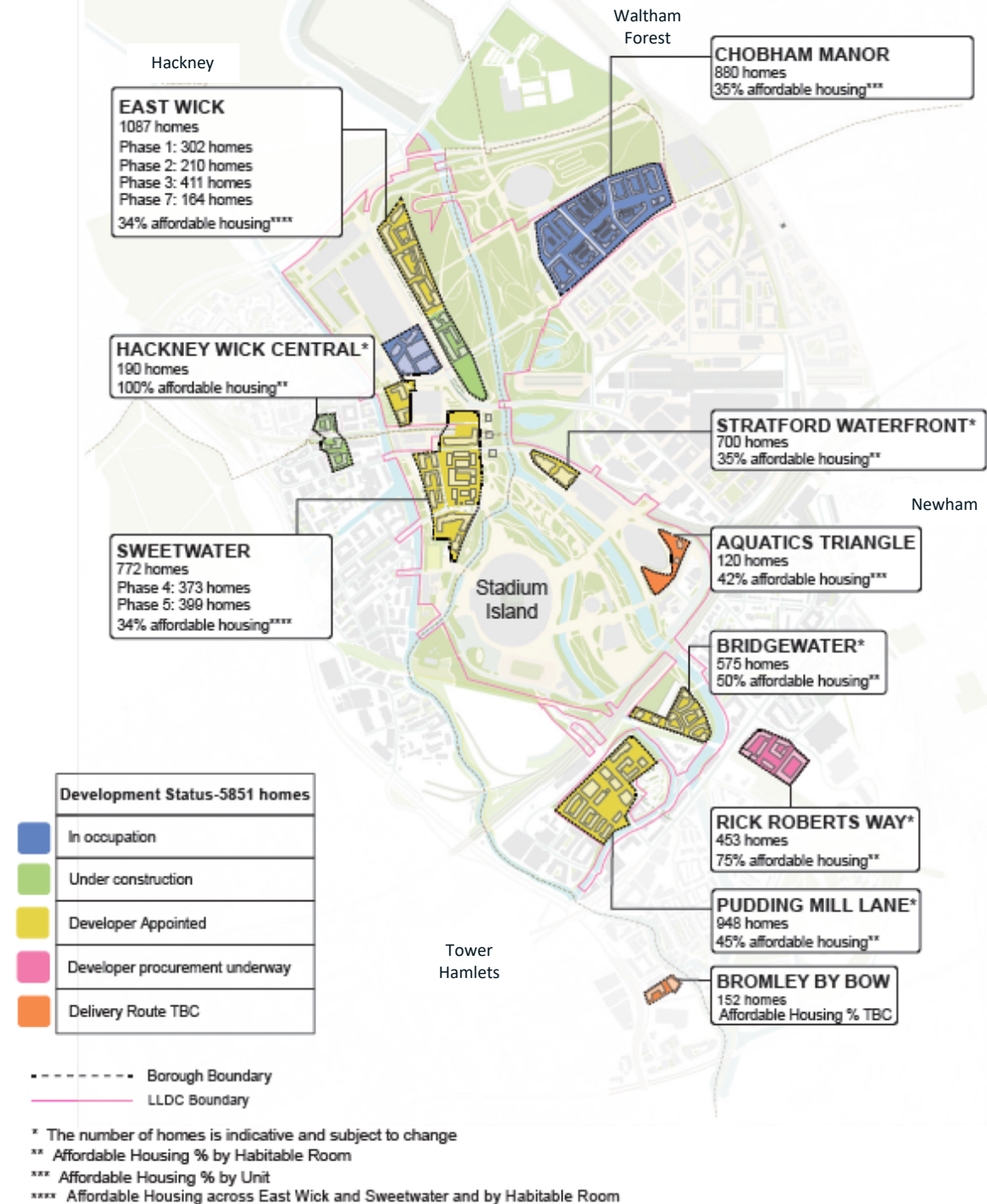
Gwenaël Jerrett, London Legacy Development Corporation

LLDC Housing Delivery

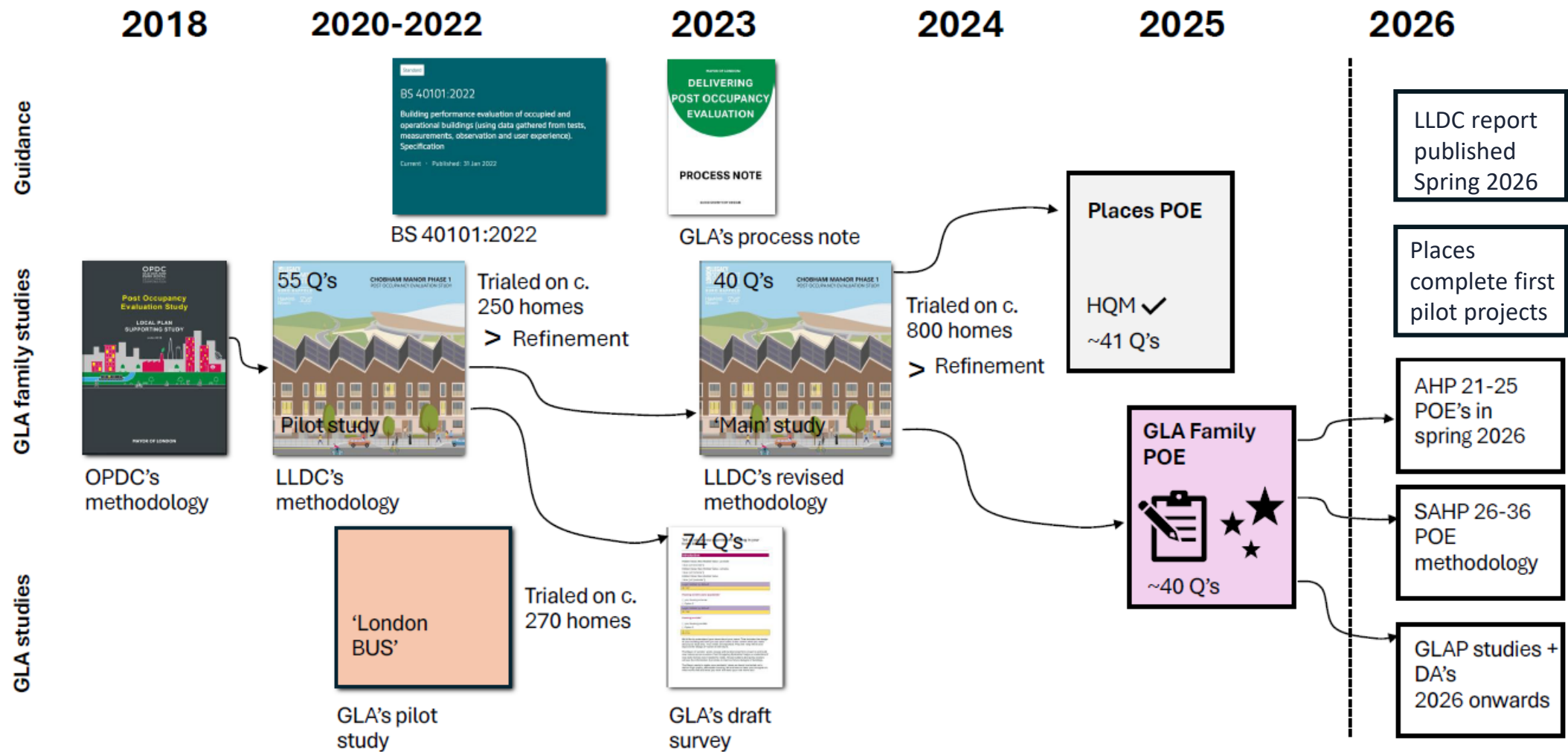
1,392 homes delivered at Chobham Manor + East Wick

190 homes under construction at Hackney Yards

Approximately 4,300 more homes in the pipeline



GLA group collaboration



Chobham Manor POE

- 880 homes (four phases)
- 300 surveys completed
- 52 one-to-one interviews
- **50 homes monitored** including internal temperature, humidity + air quality; heat, energy + water use; thermography
- 12 focus groups



My neighbourhood



My block



My home



Chobham Manor Findings

High satisfaction and pride:
About 75% of respondents were satisfied
with the neighbourhood, and 79% felt proud
of their home

“Love the property I live in. It’s well
designed, warm, lots of natural daylight.
The local neighbourhood has lots of bars,
eating places and sports facilities”

Modern architecture, generous public realm
and well-planned layouts were highly valued,
alongside proximity to schools, green spaces
and transport.

“I love the neighbourhood. You can tell it has
been carefully planned with wide pavements, lots
of green space and bike paths. It’s very different
to the rest of London in that it’s actually made
for the residents.”



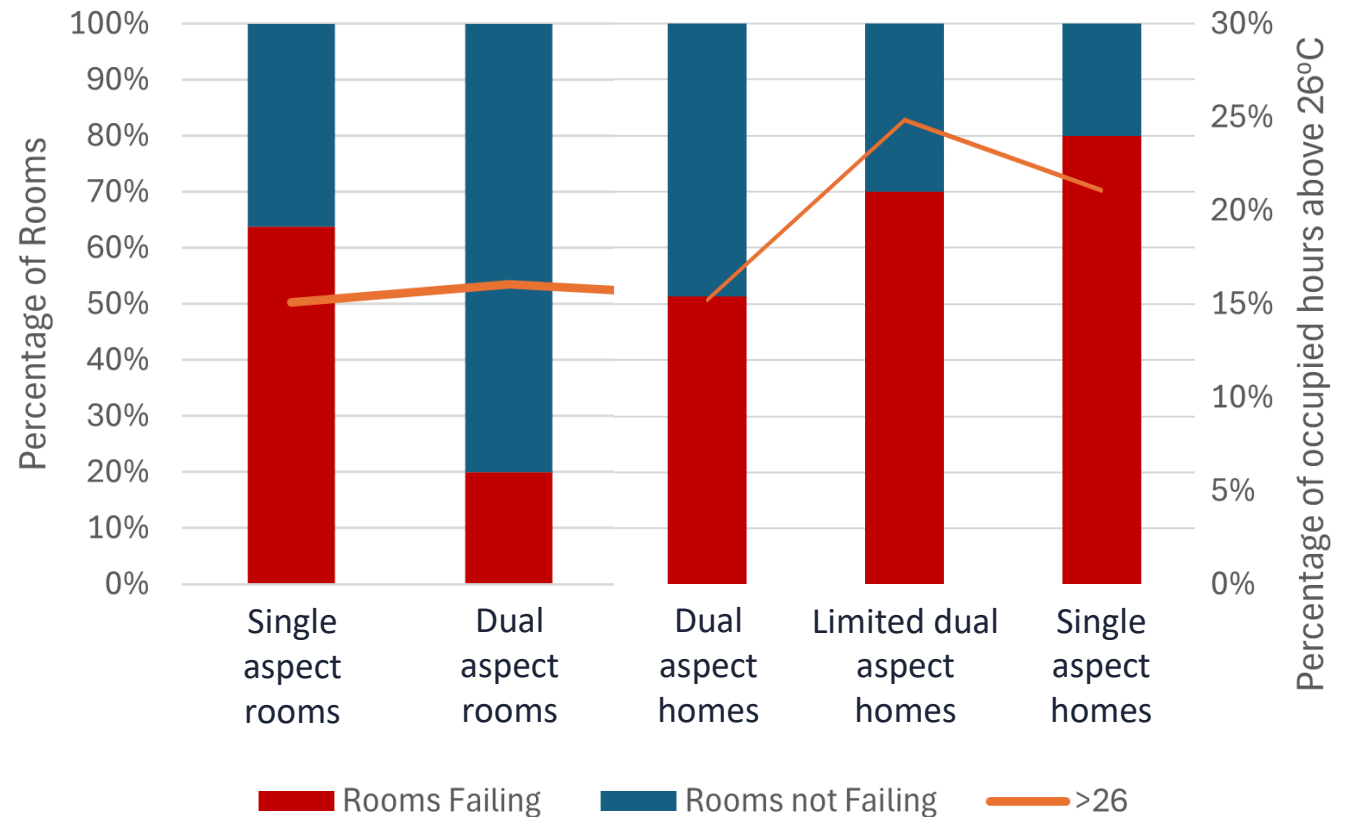
Chobham Manor Findings - comfort

80 % of residents satisfied with winter temperatures

Only 45% of residents satisfied with summer temperatures

"The living room kitchen windows do not open, and you have to open the whole double glazed door to get some fresh air... Same with [my] back bedroom. You can open the door but there is not a single window in this bedroom with in can be opened. Why?"

"Fully glazed, no brise soleil, only doors so you can't ventilate at night, when not home, or when raining."



LLDC Post Occupancy Evaluation



Find out more:

<https://www.queenelizabetholympicpark.co.uk/about-us/how-we-work/designing-successful-neighbourhoods>



Barry Lynham
Managing Director,
Knauf Energy Solutions



KNAUFENERGY
solutions







Your always in context
social housing expert

Its knowledge is relevant to your
business.

Partnered by the very best

Developed by



Healthy
Homes Hub

Legal Partner

Anthony
Collins

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Housing News Update Request

2024 UKUT 341 Case Summary

Fire Safety Policy Compliance Review

Court of Appeal Case Analysis

Court of Appeal Case Analysis

Building Safety Regulator Registration De...

Fire Safety Policy Compliance Review



Is there any housing news today that I need to be aware of?



I'd be happy to help you find the latest housing news. Let me search for recent housing-related news and updates for you. I'd be happy to help you find the latest housing news. Let me search for recent housing-related news and updates for you. Let me try a more specific search to find actual current news stories and updates. Let me try a more specific search to find actual current news stories and updates. I apologize, but I'm not able to access real-time news feeds or today's specific housing news stories through my available tools. The web search function is primarily designed to access regulatory and government websites rather than news outlets.

However, I can suggest some reliable sources where you can find current housing news:

Key Housing News Sources:

Inside Housing - Leading UK housing sector publication

Housing Today - Daily housing news and analysis

Social Housing - News for social housing professionals

Housing Ombudsman Service - For regulatory updates and new determinations

Regulator of Social Housing - For regulatory news and consultations

Ministry of Housing, Communities & Local Government - For policy announcements

What I CAN help with:

Persona:

Default

Normal



Deep Thinking

Web Search

Deep Thinking Tools

Policy Rating

Type your message here...





Persona Management

Add Persona

Search personas by name...

ID	Name	Description	Actions	
1	Asset & Compliance Lead	Focus on regulatory compliance, asset management standards, building safety requirements, and risk mitigation. Emphasize legal obligations and compliance frameworks.	Edit	Delete
2	Customer Experience Lead	Focus on tenant satisfaction, communication strategies, complaint resolution, service improvement, and customer-centric policies. Emphasize accessibility and user experience.	Edit	Delete
5	Customer Persona	Respond as if speaking to a tenant or resident. Use clear, accessible language. Focus on practical impacts, rights, and what this means for them personally. Avoid jargon and explain technical terms.	Edit	Delete
3	Strategy & Transformation Lead	Focus on strategic implications, organizational change, long-term planning, innovation opportunities, and transformation roadmaps. Emphasize business objectives and strategic outcomes.	Edit	Delete
4	Sustainability & Retrofit Lead	Focus on environmental sustainability, energy efficiency, retrofit programs, carbon reduction, green building standards, and sustainable housing practices.	Edit	Delete





Policy Documents Overview

1

Total Documents

0

Completed

0

Processing

0

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Search documents by na

- All
- Completed
- Processing
- Failed

fire-safety-policy-and-guidance.pdf	ready	PDF
/fire-safety-policy-and-guidance.pdf		
Uploaded: 18 Dec 2025	29 days ago	606 KB





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Joseph Michael Daniels
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Closing Remarks

- **Laura Broderick** – Programme Director, Good Homes Alliance
- **David Smith** – Director of Strategic Partnerships, South East Consortium

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