CIBSE
Resilient Cities Group

elemental LONDON | 19-20 November 2025 ExCeL London

Regenerative Design and Resilient Cities

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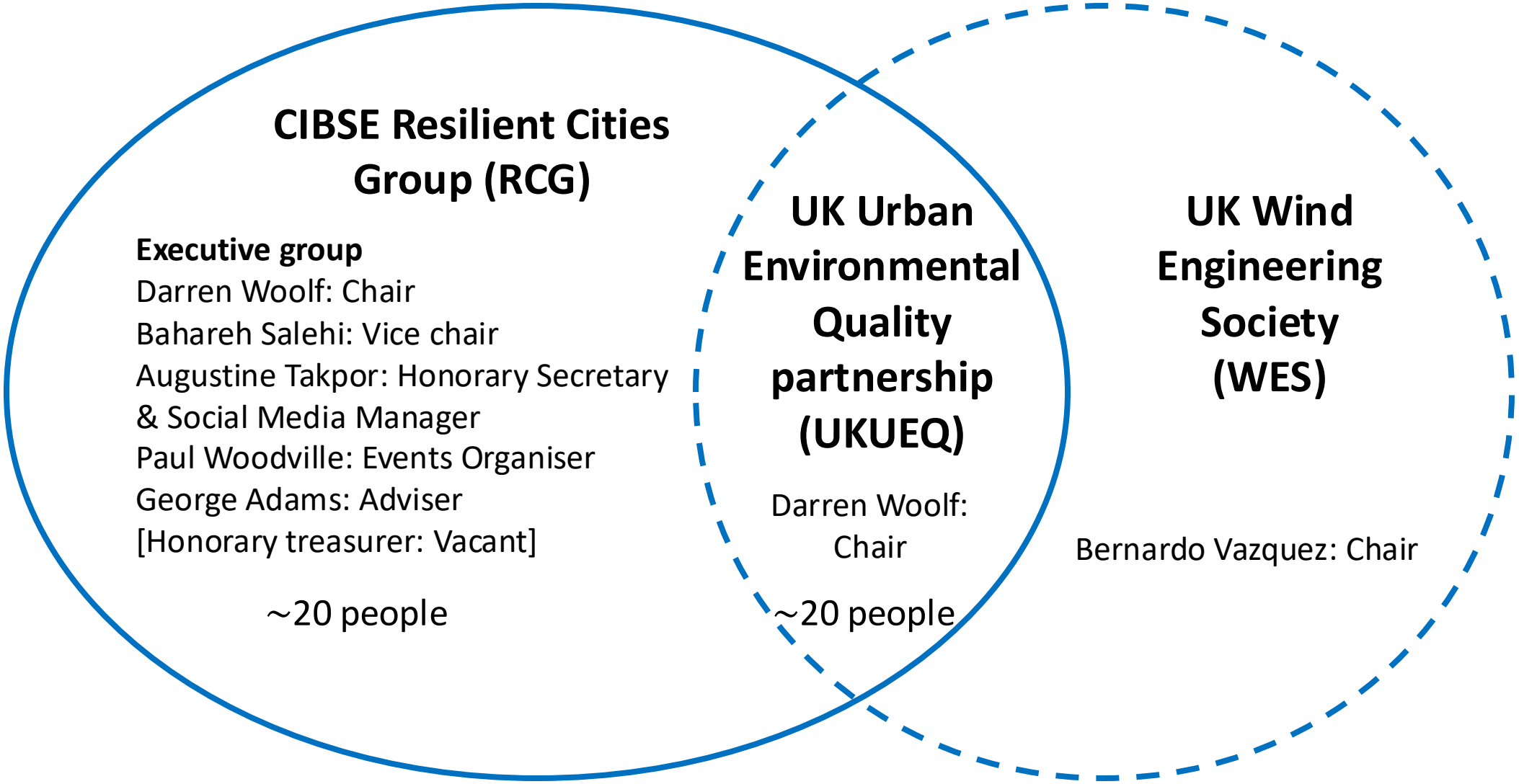
Speakers

- **Darren Woolf** – Chair, CIBSE Resilient Cities Group
- **Alice Poole** – Associate Partner, PA Consulting
- **Julie Futcher** – An independent consultant specialising in climate-responsive urbanism
- **George Adams** – Former CIBSE President and Gold Award winner

A Collaboration



RCG-UKUEQ Potential Areas of Influence

★ Alignment with Regenerative Design

RCG-UKUEQ: Terms of Reference

RCG only

- Advanced simulations
- Building services - New build
- Building services - Retrofit / heritage
- Circular economy
- Climate change
- Daylighting / solar access
- Financial aspects
- Health & wellbeing
- Microgrids / smart grids
- Natural disasters
- Neighbourhood scale resilience
- Passive cooling and heating
- Renewable energy
- Resilient city materials
- Social and economic status
- Social equity and value
- Systems-based approaches
- Technology
- Urban density and future needs
- Urban planning
- Use of models
- Water-related issues
- Weather / climate data

UKUEQ only

- Acoustics
- Adaptive decarbonisation
- Air quality
- Blue-green / nature-based design
- Regenerative design — Today
- Climate walks
- Site climate moderation
- Solar - thermal
- Surface properties
- Surface water and drainage systems
- Urban emergency
- Urban heat / cool island effect
- Urban morphology
- Urban vegetation
- Wind

RCG / WES

- Air infiltration / exfiltration / heat loads
- Air intakes / exhausts / fan pressure
- Wind loading - blue-green roofs
- Wind loading - decarbonisation / use of materials
- Wind loading - façade / solar panel / terrace paving slabs
- Wind loading - trees & vegetation / branch break

Key activities:

- Opportunities
- Resourcing
- Events
- Publications
- Sharing

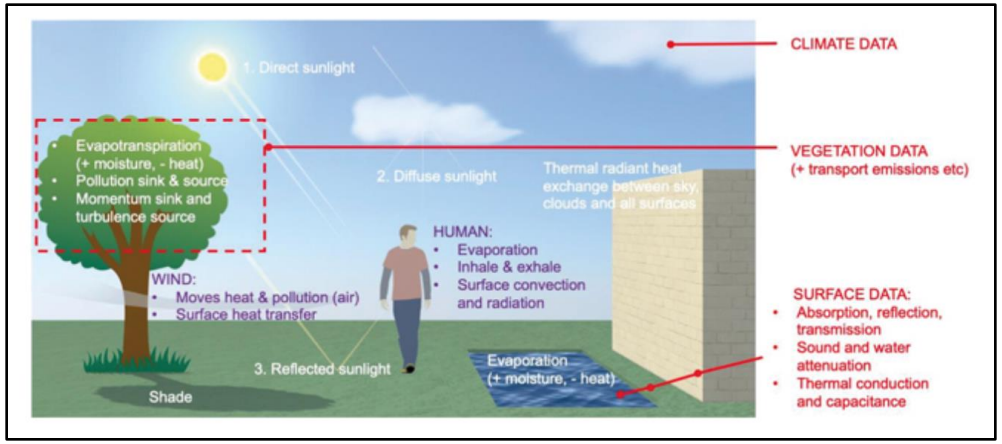
UKUEQ Publications

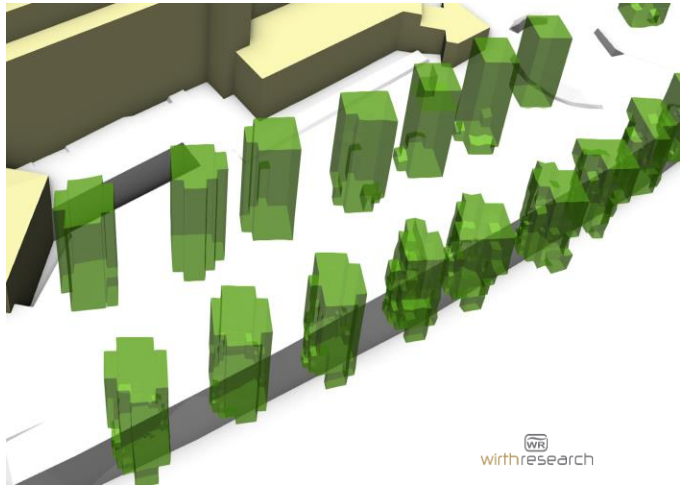
The Urban Emergency – White papers with special features on wind, thermal environment, air quality and acoustics

CFD Modelling of Urban Vegetation Systems – Technical guidance to be published in 2026

More **CIBSE Guides** at proposal stage:

- UK City Wind Microclimate Guidelines
- Modelling outdoor air quality with a focus on interfacing with the Gaussian plume techniques used in planning
- Computational Modelling of Outdoor Thermal Comfort





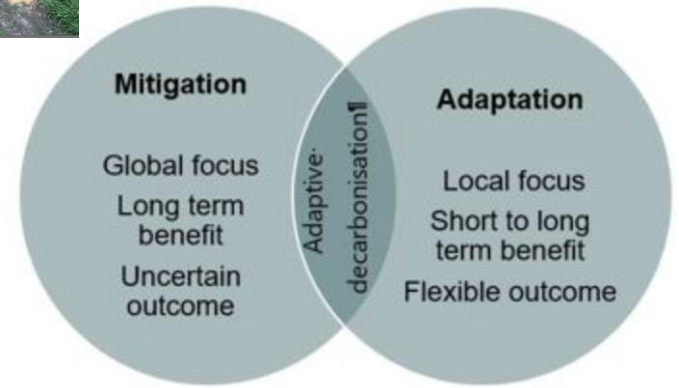
RCG News

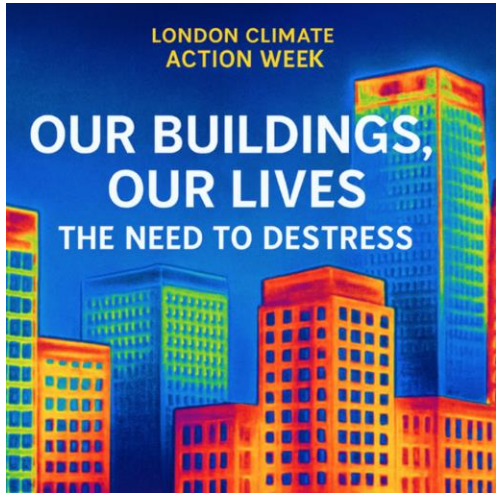
Driving the Urban Environmental Quality Agenda, six talks presented at WES Conference, September 2024

The Case for Adaptive Decarbonisation, An opinion piece, January 2025

Embedding Climate Resilience in the Built Environment, London Climate Action Week webinar, July 2025

A Wicked Collaboration, recording and presentation of what we're *not* talking about and need for better academic-industrial collaborations, July & September 2025

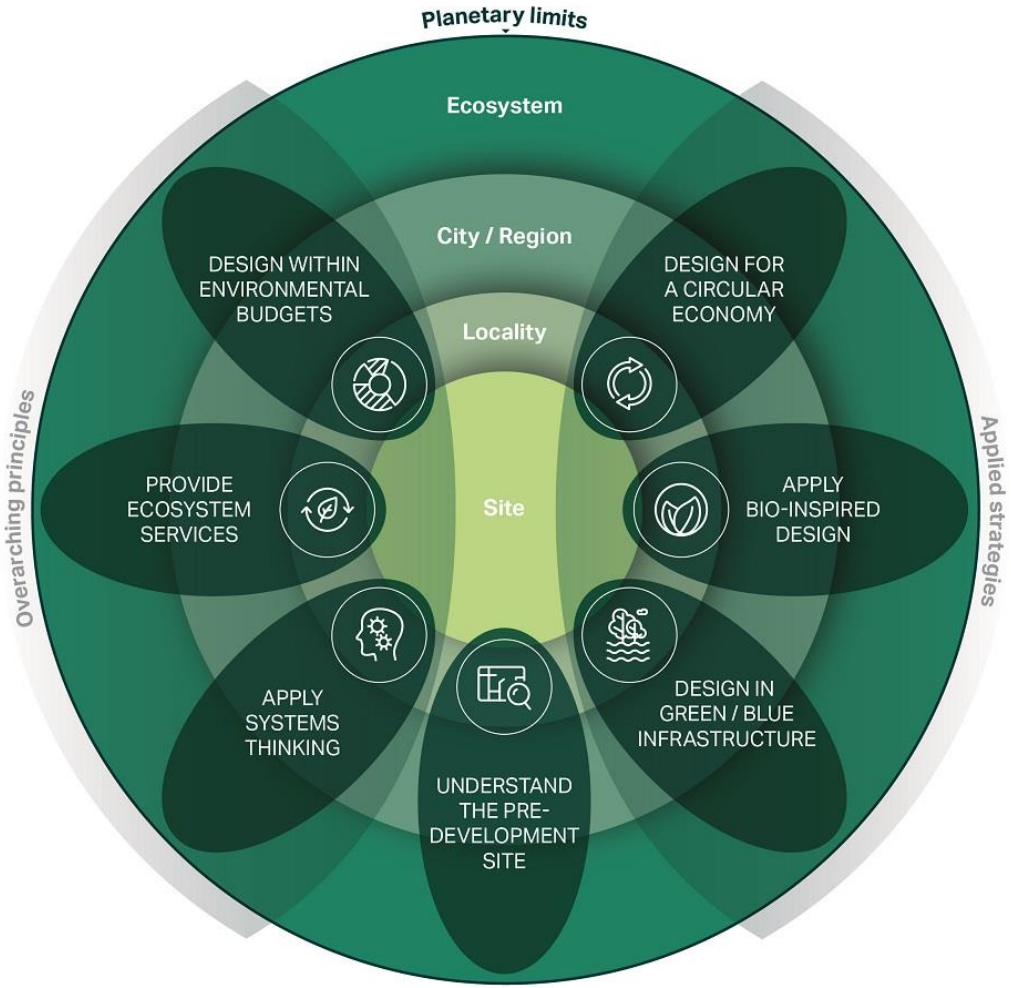




"Climate change is here. We're in trouble. Are we asking *all* the right questions?"

Regenerative Design

- Human and natural systems designed to co-exist and co-evolve over time
- Working in harmony with nature instead of against it
- Developing language in need of further development within a broad subject area
- We (RCG -UKUEQ) can try to respond to your feedback:
  - Event priorities & promotions
  - Coordination of speakers
  - Communicating and guidance



Proposed seven regenerative design principles mapped onto a hierarchy of scale from the site through to the ecosystem, all bounded by the planetary limits [David Cheshire]

https://www.arup.com/insights/what-is-regenerative-design/
https://aecom.com/without-limits/article/seven-regenerative-design-principles-to-change-our-cities/

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Today's Presentations

1. Regenerative design aspects of urban resilience
2. How built form functions as active climate infrastructure
3. Role of function and context in regenerative practice
4. Understanding and leveraging aspects for improved climate resilience and sustainability.

Regenerative Design and Resilient Cities

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Regenerative Design and Resilient Cities

I'm passionate about the potential of regenerative design to restore, renew, and replenish our environment and ensure our cities thrive

- I'm Alice Poole – a sustainability and major programme expert with particular focus on adaptation and resilience and delivering social impact.
- Associate Partner at PA Consulting, sponsoring our Sustainability Service in our large Delivery capability.
- At PA, we believe in the power of ingenuity to build a positive human future. We've recently launched **Regenerative Futures** as our bold new positioning, moving beyond sustainability to restore, renew, and actively replenish the systems we depend on.
- It's a call to action – and regenerative design and resilient cities are part of that future we envisage and which we work passionately to support.

There are a variety of sets of principles for regenerative design – they all incorporate aspects around nature, relationships, and equity

- Regenerative design fundamentally is bolder than 'Net Zero' or de-carbonisation – it is an **ambitious approach to build and co-create better** – better buildings, better communities, better systems, better ecosystems.
- It moves behind the idea of one fantastic low-carbon/sustainable building standing in splendid isolation, to a bigger application with wider goals.
- It incorporates aspects around **mitigation/ decarbonising** – including in the types of materials used and re-used and how energy and water are produced and reused…
- And, crucially, **aspects around adaptation** – how we will be able to thrive in ecosystems which are affected by climate change (e.g., hotter, wetter, drier) – from shading and insulation, to sustainable drainage solutions (SuDS).

Regenerative design aims to address more systematic challenges, incorporating people and equity at its heart

- It aims **to address a set of systematic, intertwined challenges** – including degradation of the environment, widening inequality, social isolation, community displacement, increasing lack of trust in institutions and polarisation, youth and other unemployment
- As well as the environmental sides of sustainability, regenerative design incorporates **people and equity in its core**– not just in isolation, but as part of communities, and not just as recipients but as co-creators, benefiting from economic growth and improved wellbeing.
- **Education and skills** are also key to regenerative design – from ensuring local people and others benefit directly from the construction of the site(s) and ensuring that education (from nurseries to youth centres to universities) are factored into the design.
- Regenerative design, at its best, is deeply **inspiring, promoting joy and pride.**

One set of regenerative design principles is from the US Green Building Council, published in 2024

1. Ecosystem-centric

- Designing landscapes that support local biodiversity, use native plants, and promote habitat restoration.
- Actively **contribute to enhancing the ecosystem**
- Considering the production, usage and waste of resources—including energy and water, especially in the context of climate change and added scarcity.

2. Social well-being

- Not only thinking about individual users and promoting individual wellness – also enhancing social, **collective interactions** and diverse needs.
- Promoting social interaction to the surrounding area, community and city to foster community cohesion and inclusivity - including transportation, public space and public services, and commercial support.

Five key principles in designing regenerative buildings | U.S. Green Building Council; Regenerative design: urban spaces for people and the planet | World Economic Forum

US Green Building Council – the Prosperity principle also focuses on how jobs can be created both in construction and afterwards, and how educational opportunities can be factored in

3. Prosperity

- Regenerative buildings encourage businesses to invest in the community, create jobs and foster economic growth, focusing on the growth of the existing local economy and quality of life.
- Sustainable practices within construction projects can lead to increased local spending, local businesses and job opportunities.
- Incorporating how **educational institutions can thrive** within the ecosystem – from nurseries to universities, to adult training.
- When major buildings (commercial/ mixed use) are constructed, they can become **hubs for employment**. Current residents benefit from job opportunities, leading to a positive feedback loop for the economy.

Five key principles in designing regenerative buildings | U.S. Green Building Council;

Circularity and disassembly - more actively think about the way in which buildings are constructed and how they can be disassembled after the end of their life cycle

4. Circularity

- Building materials should be intentionally designed to be either **endlessly recyclable or biodegradable.** The goal is to enable materials to flow in a continuous loop without generating waste or to naturally break down over time.
- Key principle to explore beyond carbon impact and take a holistic view of sustainability, not only low global warming potential (GWP) materials.

5. Disassembly

- Creating products and structures that can be easily disassembled at the end of their life cycle. By designing for disassembly, we enable efficient recycling, repair and reuse of components.
- Replacing the end of life for buildings typically meaning demolition.

Five key principles in designing regenerative buildings | U.S. Green Building Council;

Regenerative design isn't new – it can be traced back to both indigenous cultures around the world and earlier parts of British history – e.g., Crossness Pumping Station ('Cathedral of Sewage') in London

- Opened in 1865 - part of visionary sewage system designed by Joseph Bazalgette.
- Effective and bold response to the Great Stink of 1858 when heat and drought exacerbated the smell of the Thames.
- Crossness housed four beam engines which pumped untreated wastewater into the Thames estuary on the ebb tide.
- Incorporated advanced Victorian engineering principles including brick-vaulted tunnels, cast-iron columns, and steam engines.
- I love the responsibility and care shown – to solve very important hygiene and wellbeing challenges through thoughtful and beautiful design.

Gallery - Crossness Engines Trust; The Cathedral of Sewage: How London's past is flushing us toward a cleaner future - International Water Association; Alice Poole personal photograph

RIBA's prestigious Stirling Prize 2025 was awarded to a brilliant example of an ambitious regenerative design project designed to combat loneliness - Appleby Blue Almshouse in Bermondsey

- 59 Affordable flats for over-65s.
- Beautiful, uplifting, and high quality.
- Communal facilities, including a community kitchen, are at the heart of the design.
- Witherford Watson Mann clearly worked very closely and sensitively with the charity and the judges said it: "sets an ambitious standard for social housing among older people".
- I love that it encourages older people to interact in different ways – from sitting outside their own home, to using the collective vegetable patches, and having the communal areas closest to the community.

BBC - Riba Stirling Prize 2025: Appleby Blue Almshouse named Britain's best new building - BBC News; Stirling Prize 2025 winner: Appleby Blue by Witherford Watson Mann

Regenerative design also contributes to resilient cities, which the World Economic Forum thoughtfully reflects on:

- Social and cultural dynamics are the result of long histories and far-reaching, inter-connected factors over time and place.
- Local economic patterns are influenced by regional and global ones – from trade to conflict to war.
- Cities are extremely complex organisms that create their own ecosystems, which are unique to every city. By recognizing these interdependencies, it is also possible to draw from their strengths:
- **District-wide solutions:** energy generation, heating, cooling, water remediation, public transportation. There are lots of examples here – from the Elizabeth Line to district-heat solutions.
- **Resilience planning:** enabling redundancies and contingencies throughout a larger system and increasing the ability of any component to maintain operational continuity through periods of adaptation to climate change (e.g. heat, flooding, drought).

Regenerative design: urban spaces for people and the planet | World Economic Forum

Cities also enable greater integration across the ecosystem and support larger constituencies able to mobilise resources

- **Ecosystem services integration:** helping restore and benefit from life-sustaining systems naturally occurring in the city's ecosystem, thus increasing food security, water security, and overall well-being.
- **Policy frameworks and economic incentives**: through the aggregate of a larger constituency (cities have more people both living and working in them) who can mobilise resources towards stated priorities, and which typically have more attention and investment from policy-makers and politicians.

Regenerative design: urban spaces for people and the planet | World Economic Forum

Think how you can get involved to support regenerative design in building more resilient and thriving cities, for example:

- **Developers:** incorporate community enhancement and interaction at the heart of regenerative design, aim to create something which works for the many, not just the few, ensure that developments are high-quality and creative, and provide local jobs.
- **Architects:** embrace regenerative design principles and actively co-design with all stakeholders, incorporating joy and wellbeing, and promote social cohesion.
- **Engineers**: ensure that adaptation and mitigation are incorporated throughout, incorporate measures to promote resilience and sustainable use of energy and water.
- **Community leaders:** ensure many disparate voices are heard throughout all stages, especially early on for maximum influence, and be open to experimentation.
- **Planning authorities:** actively support regenerative design principles and practices, aim to be collaborative partners, while ensuring that the developers follow through on their commitments.
- **YOU?**

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Regenerative Design and Resilient Cities

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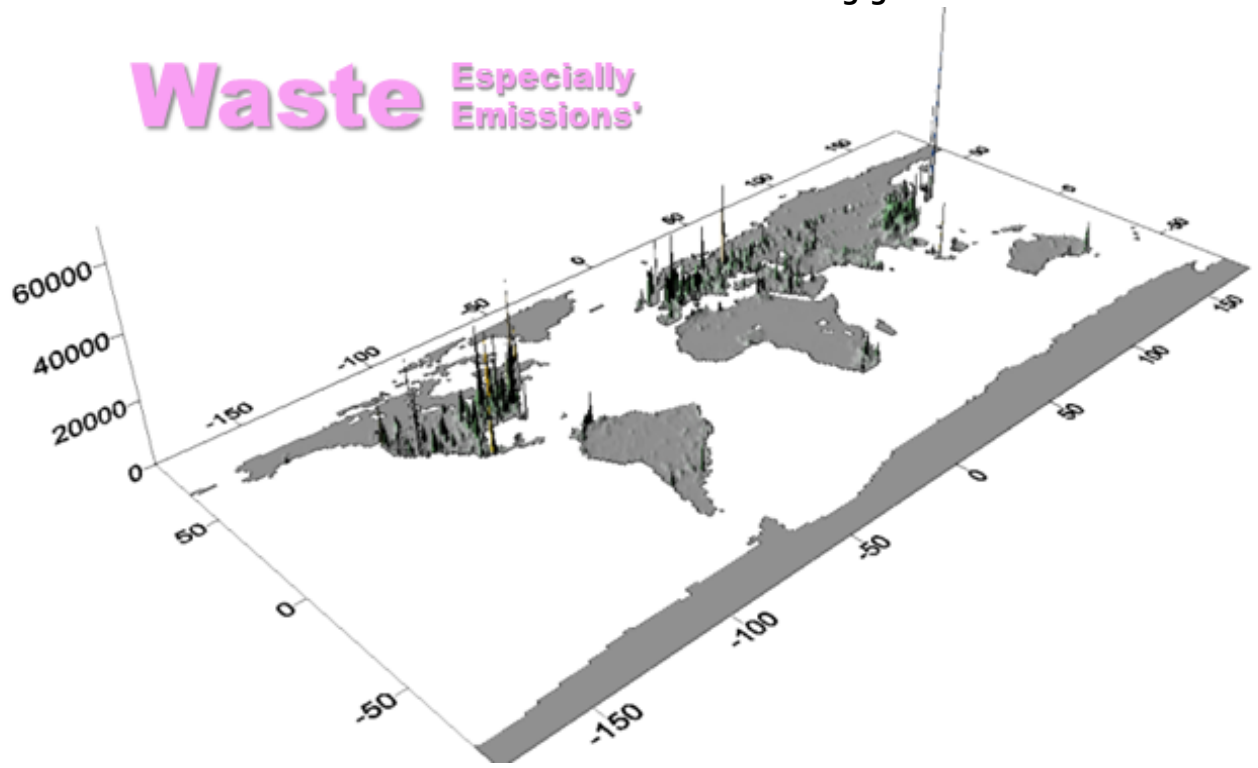
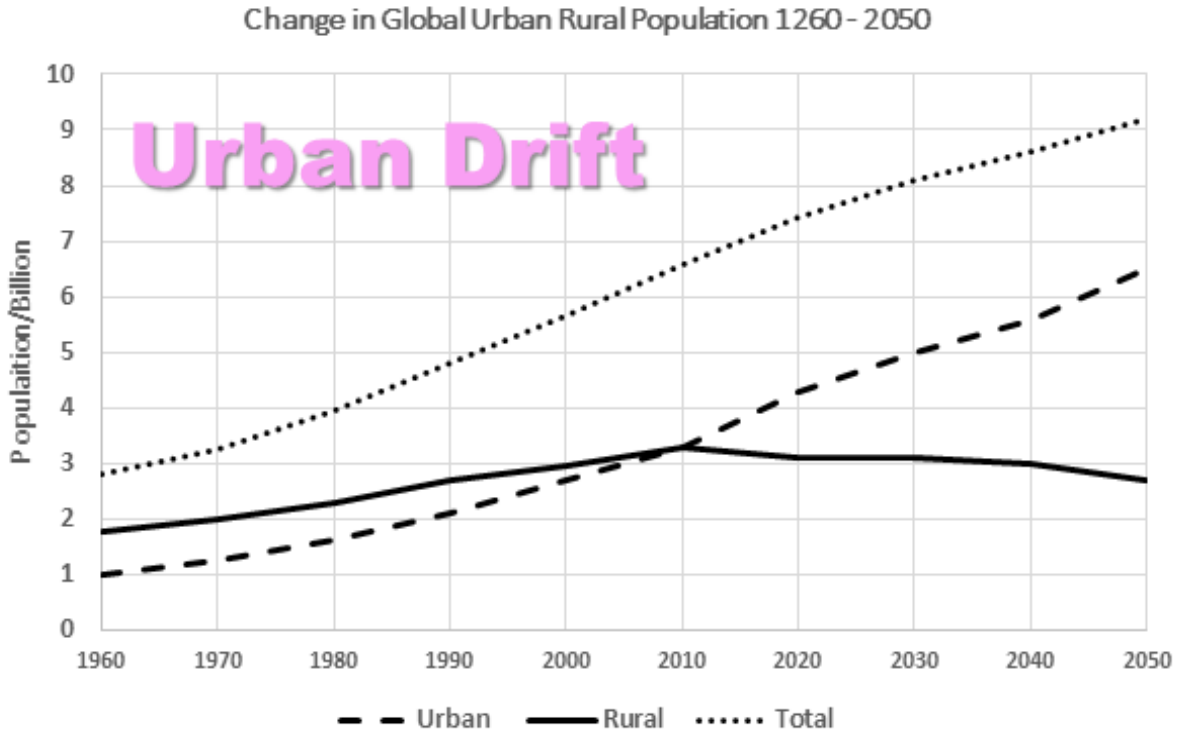
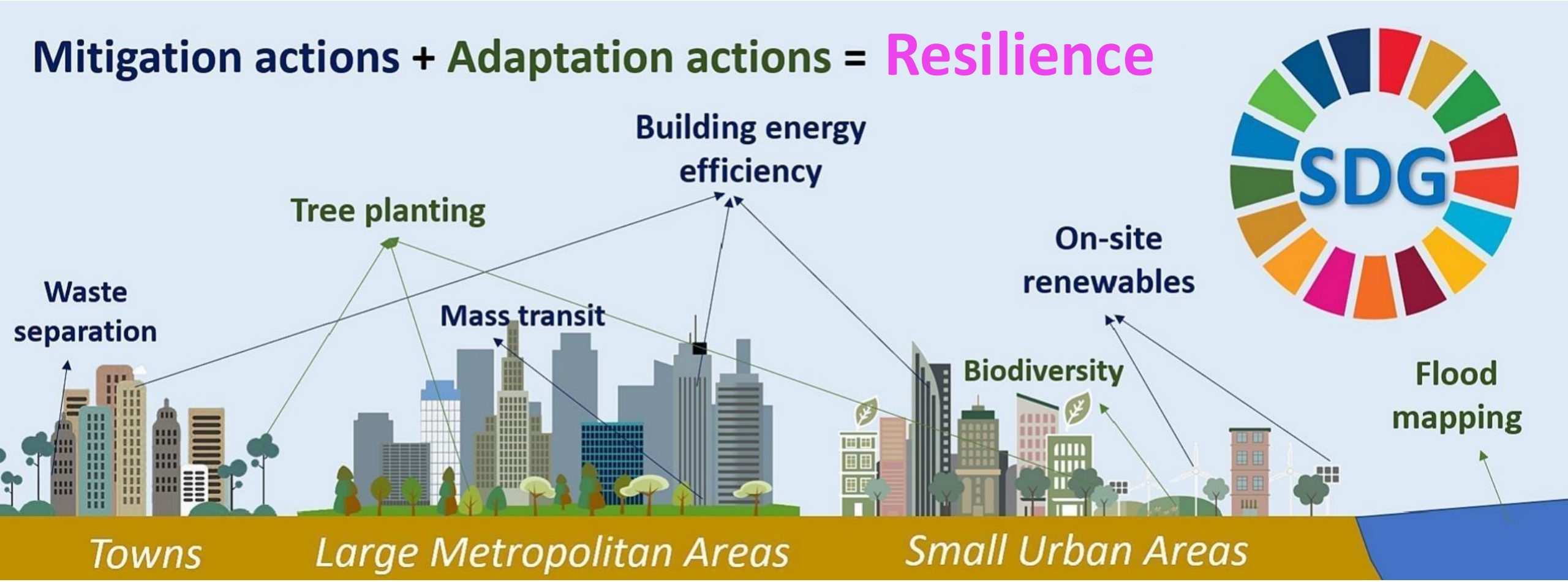
- 50% of the Global Population live in urban environments (3.3 billion 2008) (Around 85% of total UK, population)
- 80% of the predicted 9.07 billion population by 2050
- Occupies <3% of ice-free land (Around 11% of total UK land mass)
- Producing 70% of global CO_2e (in the UK, 49% of annual CO_2e are attributable to buildings) *1% of Global CO_2e
- Consume two thirds of global energy
- **50% of all energy is taken by buildings**
- **80% of the UK's 2050 building stock is already in place**
- 80% net-reduction CO_2e by 2050 **(increased to Net-Zero 2019)**
- **UK URBAN AIR TEMPERATURES to rise between 1.1 & 3.3 °C**







Resilience is essential in addressing both mitigation and adaptation to environmental and climate emergencies. Typically:

- Mitigation involves developing systems (such as renewable energy sources) to reduce sensitivity to, or the impact of, climate change in order to maintain functionality.
- Adaptation is about enhancing the ability of communities and systems to adjust to the effects of climate change, such as extreme weather or sea-level rise

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★ **Where will all these buildings go?**
& who is going to live in them?

Committee on Climate Change

Land use: Policies for a Net Zero UK

There is now a need to put in place clear, well-designed policies to ensure the UK's use of land contributes to the Net Zero emissions target.

- Agriculture, land use and peatlands accounted for **12%** (58 $MtCO_2e$) of all UK greenhouse gas emissions in 2017
- Our use of land **must change** to meet the UK's Net Zero target
- Actions set out by the CCC can reduce land-based emissions by **64%** by 2050
- While maintaining other **essential functions** of land, including food production and climate change adaptation
- This will also deliver **£4 billion** each year in environmental and other benefits

Actions must be taken now…

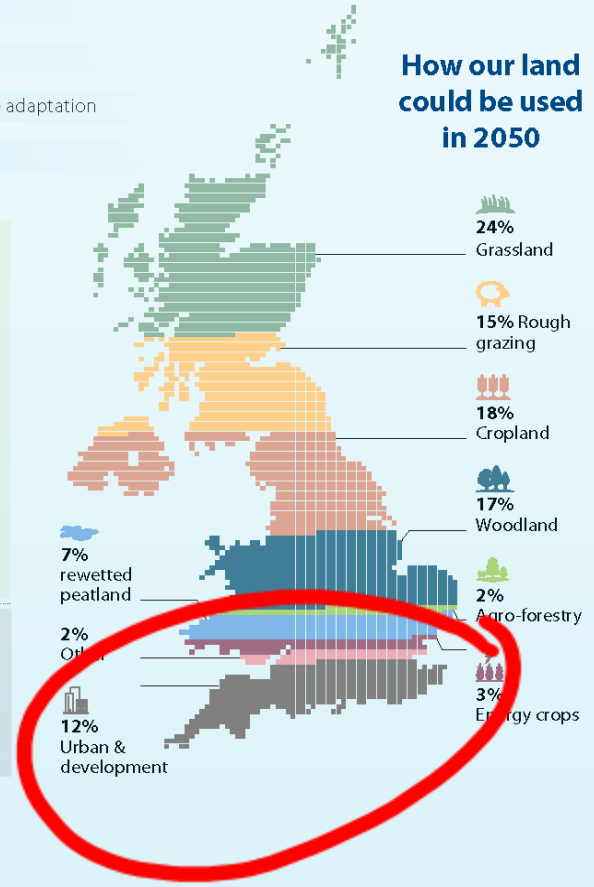
- Increase **low-carbon farming practices** for soils & livestock.
- Increase annual tree-planting to between **90-120 million** trees, equivalent to 30,000 hectares per year.
- Use **10%** of farmland for agro-forestry.
- Restore at least **55%** of peatland area by 2050.
- Increase the use of land for energy crops to **23,000 hectares** per year.

Behaviour change is also needed:

Reduce beef, lamb and dairy consumption by **20%** per capita by 2050.

Reduce food waste by **20%** by 2030.

How our land could be used in 2050



…to reduce agriculture and land use emissions…

Actions in these areas will lead to **43 $MtCO_2e$** of total annual emissions savings by 2050 compared with current practice continuing to 2050.

Emissions saving*	Forestry	Low-carbon farming practices	Diet change and food waste	Agro-forestry	Peatlands	2 $MtCO_2e$
	14 $MtCO_2e$	10 $MtCO_2e$	7 $MtCO_2e$	6 $MtCO_2e$	5 $MtCO_2e$	

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★ Tall & Very Tall Buildings are Increasingly Inserted into the Existing Urban Landscape

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- Energy supply from both on and off-site renewables (Limited Resource – **often** limited to the individual building)
  - Optimising the building fabric and the efficiency of energy demanding systems (*regulated*)
  - Change behaviour patterns towards energy efficient measures (*operational*)

Limited to the individual building



net-zero reductions CO_2 by 2050!! / 80% of the UK 2050 building stock is already in place!

GENERIC 'ENERGY ISLAND' MEASURES ALONE ARE UNLIKELY TO BE SUFFICIENT IN REACHING TARGET REDUCTIONS - SO in an attempt to address these shortfalls, our work considers an additional but often overlooked measure;

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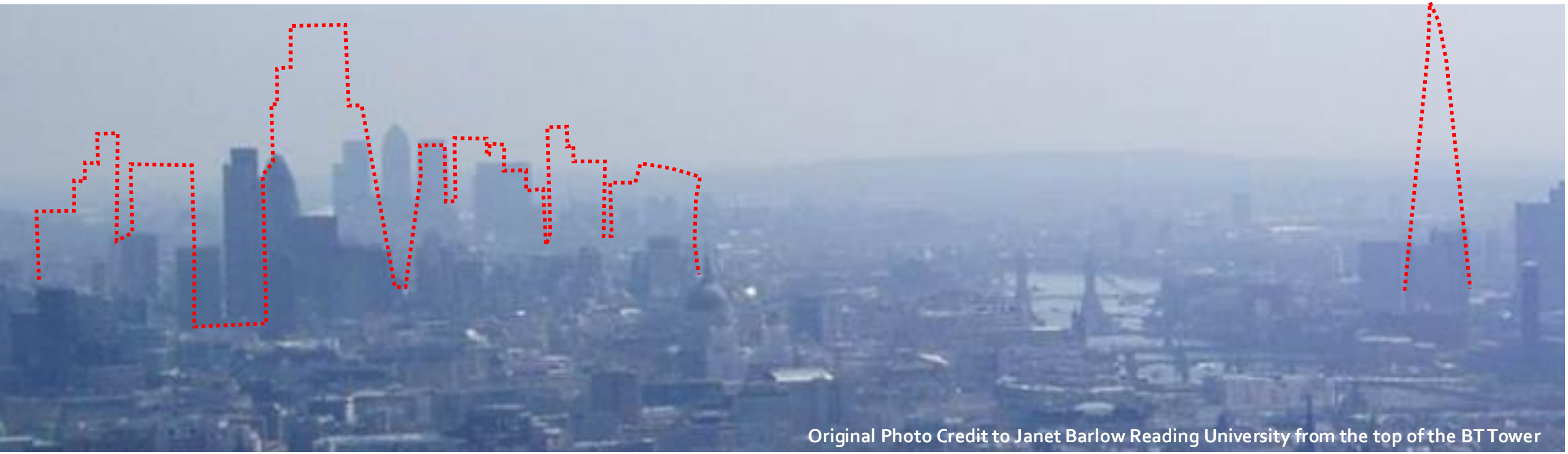
The Role of Building and Urban Form as an Energy Management Parameter

1) energy in its natural expression (temperature, wind and sunshine); 2) building energy needs (heating, cooling and ventilation); 3) anthropogenic outputs; and importantly 4) how these net-energy relationships impact on health and wellbeing

This is what we do

This is what we have



★ **URBAN LAB - CITY: City of London Case Study** | Nov 2014 – ongoing

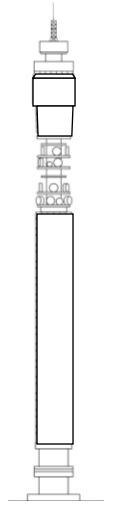
A Collaborative Research Project: Partners include the City of London Corporation, Reading University, Cardiff University, Glasgow Caledonian University, University College Dublin & features an **Urban Climate Walk** as part of its methodology.

The aim of this project is to:

1) **Disseminate critical urban climate science:** Break down disciplinary boundaries by making complex knowledge accessible and actionable across practice, policy, and education.

2) **Foster interdisciplinary conversations:** Create space for dialogue that explores the interdependencies between architecture, urban planning, climate, energy, air quality, and health and wellbeing — for all living things.

3) **Measure and reveal environmental relationships:** Use field-based methods to uncover how urban environments influence — and are influenced by — both **abiotic** (non-living) and **biotic** (living) factors, drawing insights from multiple fields.



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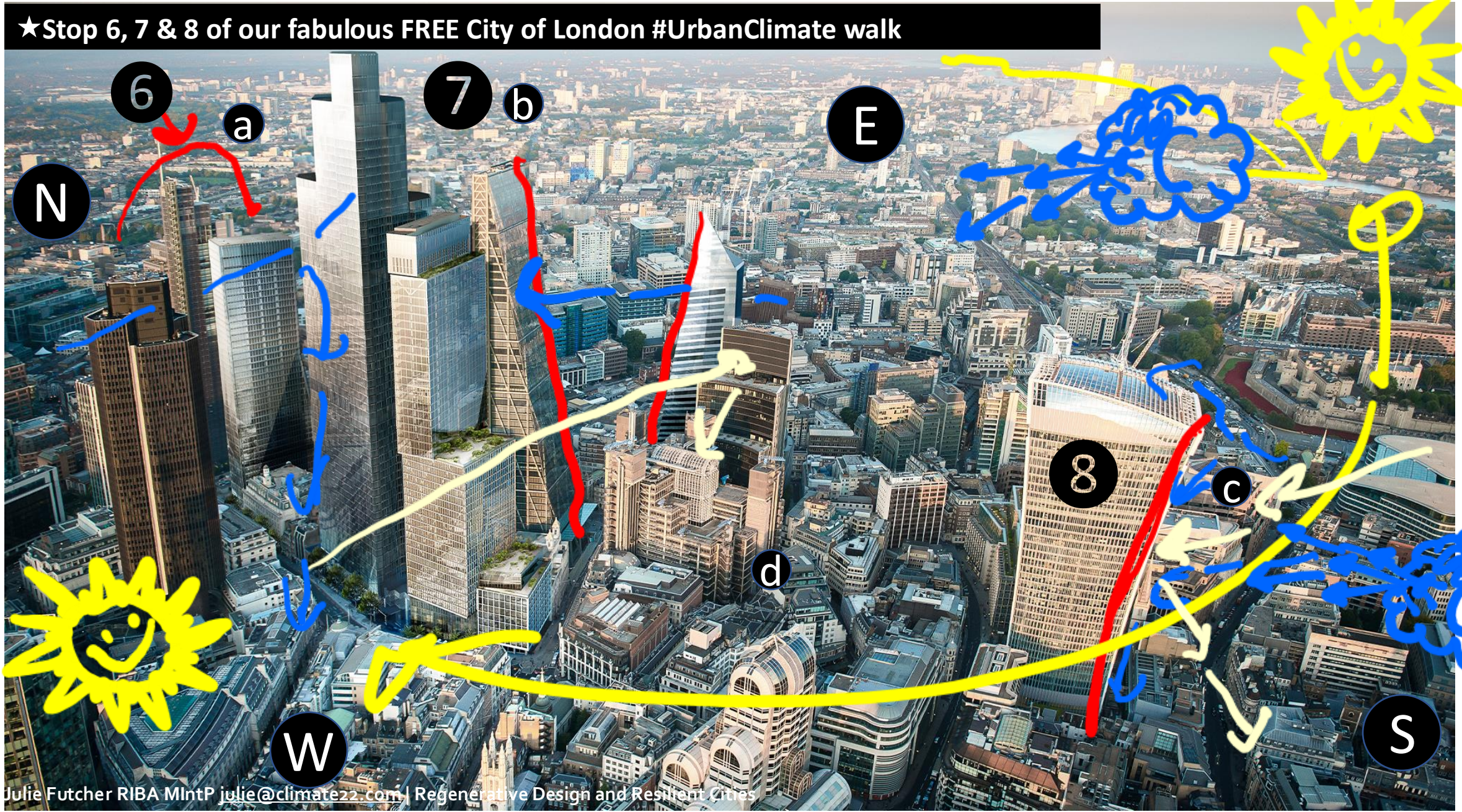
★Stop 6, 7 & 8 of our fabulous FREE City of London #UrbanClimate walk



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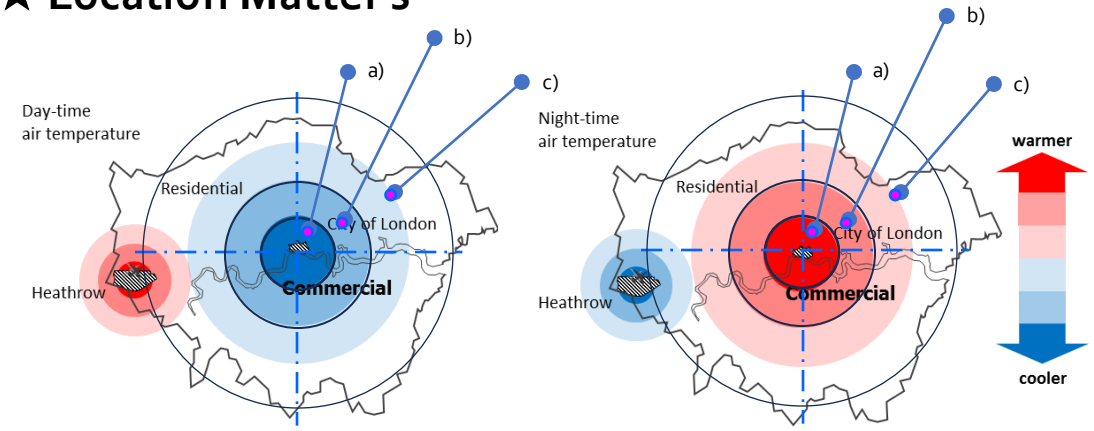
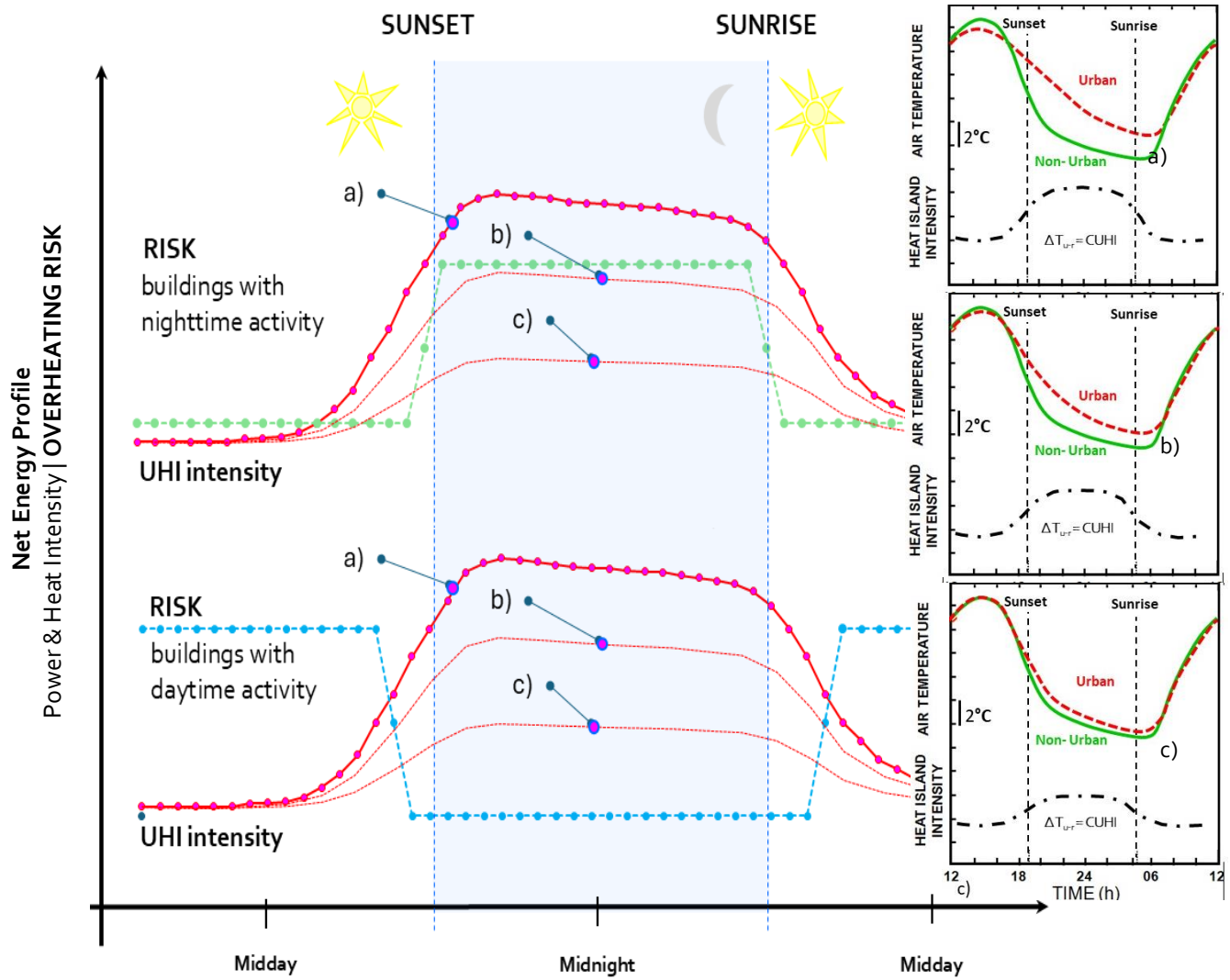
★ Location Matter's



#7: Building Functions Matter - Function influences how buildings interact with the urban climate. Different uses generate distinct energy demands, internal heat loads, and emissions profiles — all of which shape how a building contributes to, and is affected by, local climate conditions.

#8: Locations Matter - Urban climates vary across both space and time, shaped by background and local conditions that shift daily and seasonally. These effects accumulate across the landscape — meaning that even when form and function are held constant, identical buildings can perform very differently depending on where they sit.

#15: Timing is Everything - To create climate-resilient towns and cities, practitioners must identify the timing and interactions between the urban landscape and the background conditions, and consider these alongside the timing of the function



1.7 a, b & c: Typical diurnal variation for a) inner central; b) central; and c) outer zones (CIBSE recommended annular breakpoints) showing the estimated differences in air temperatures between the urban and non-urban landscapes (source Futcher 2023).

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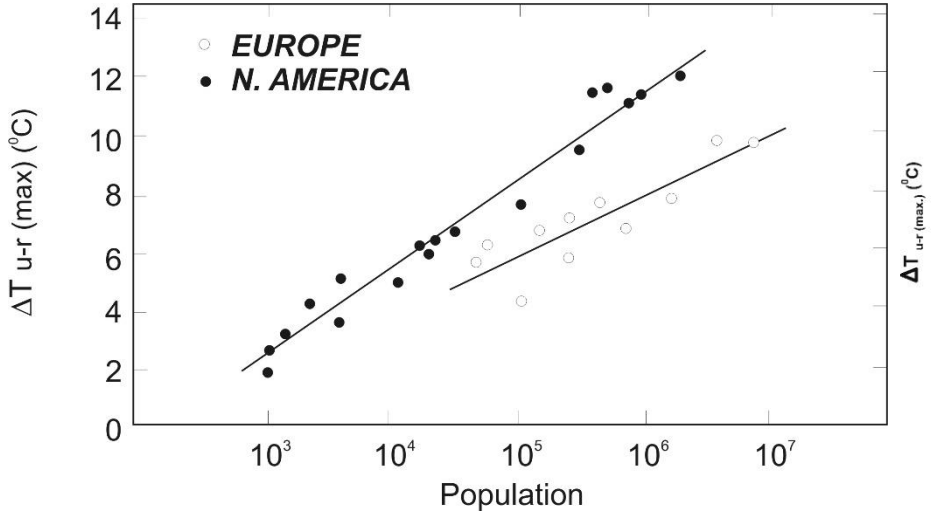
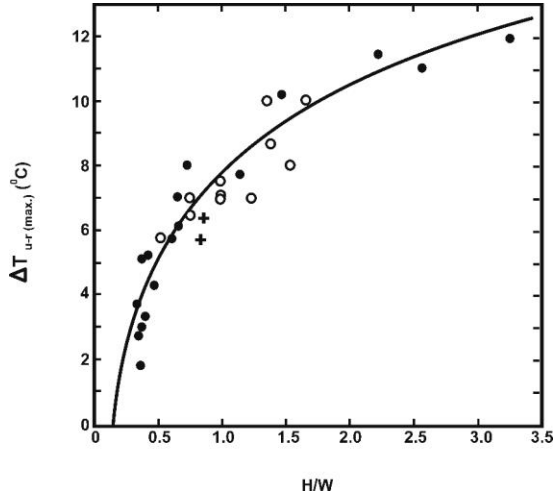
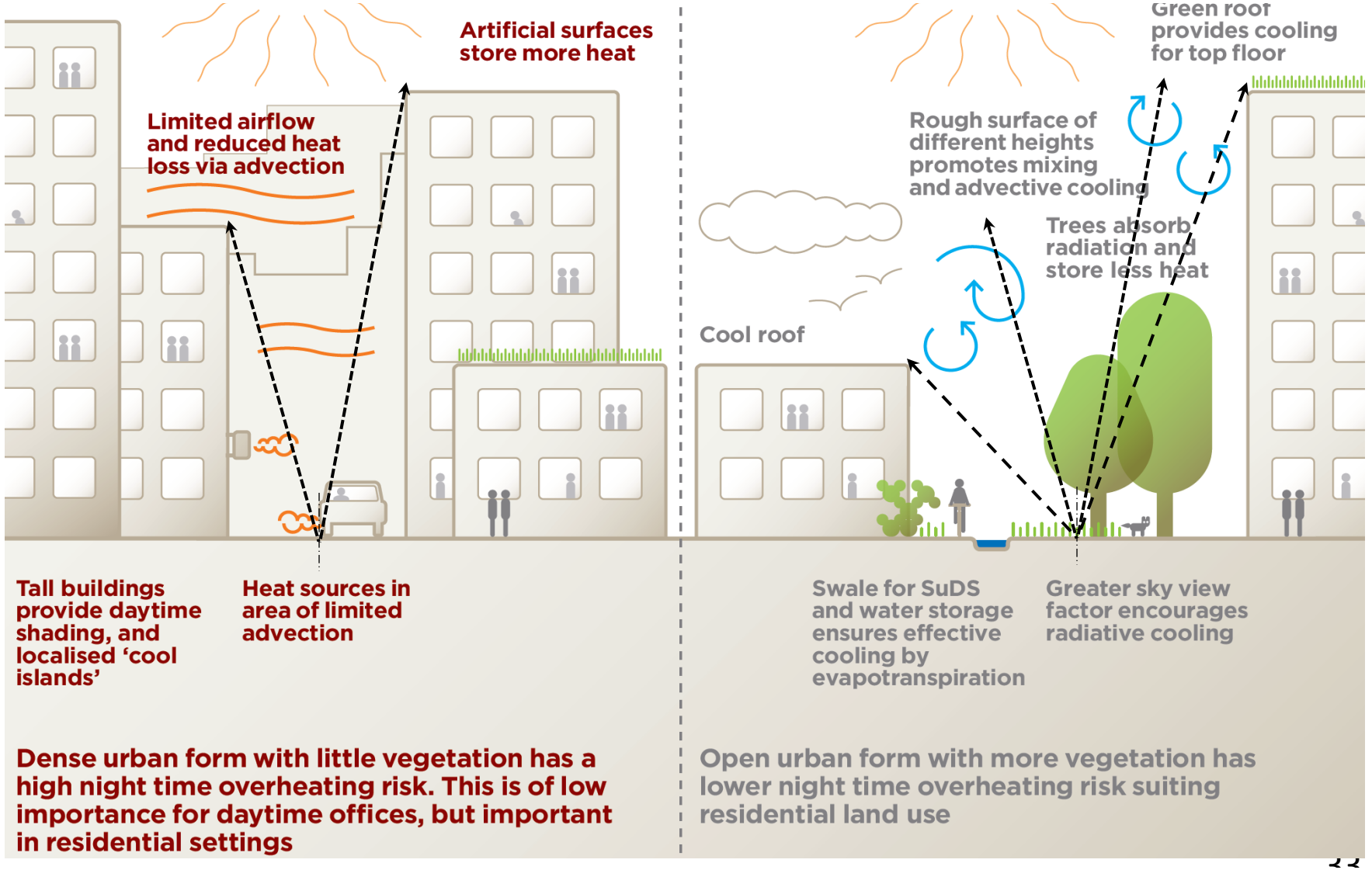
The UHI expresses differently in every city because it is jointly determined by latitude, geographic setting, background climate, urban scale, and morphology. These factors define the local balance of solar input, heat storage, and ventilation that produces city-specific overheating patterns.

★ SO WHILE NO UNIVERSAL RELATION EXISTS & THERE ARE RELATIONSHIPS WE NEED TO CONSIDER!





First Steps in Urban Heat



Educational or Commentary Use
Base image from web source, modified by author for educational purposes'

#10: A VIEW OF SKY MATTERS

#10: A VIEW OF SKY MATTERS

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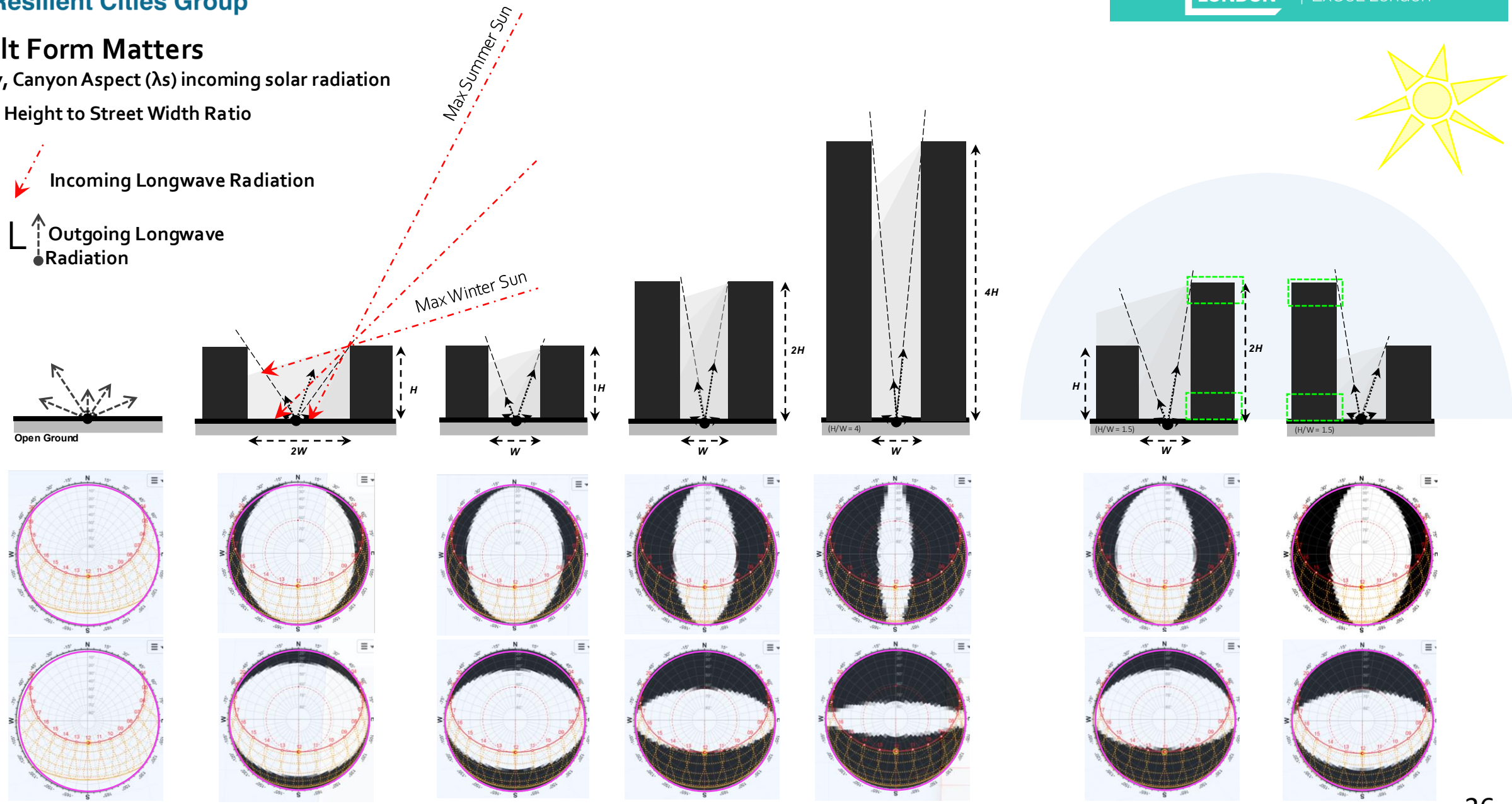
★ Built Form Matters

Typically, Canyon Aspect (λs) incoming solar radiation

Building Height to Street Width Ratio



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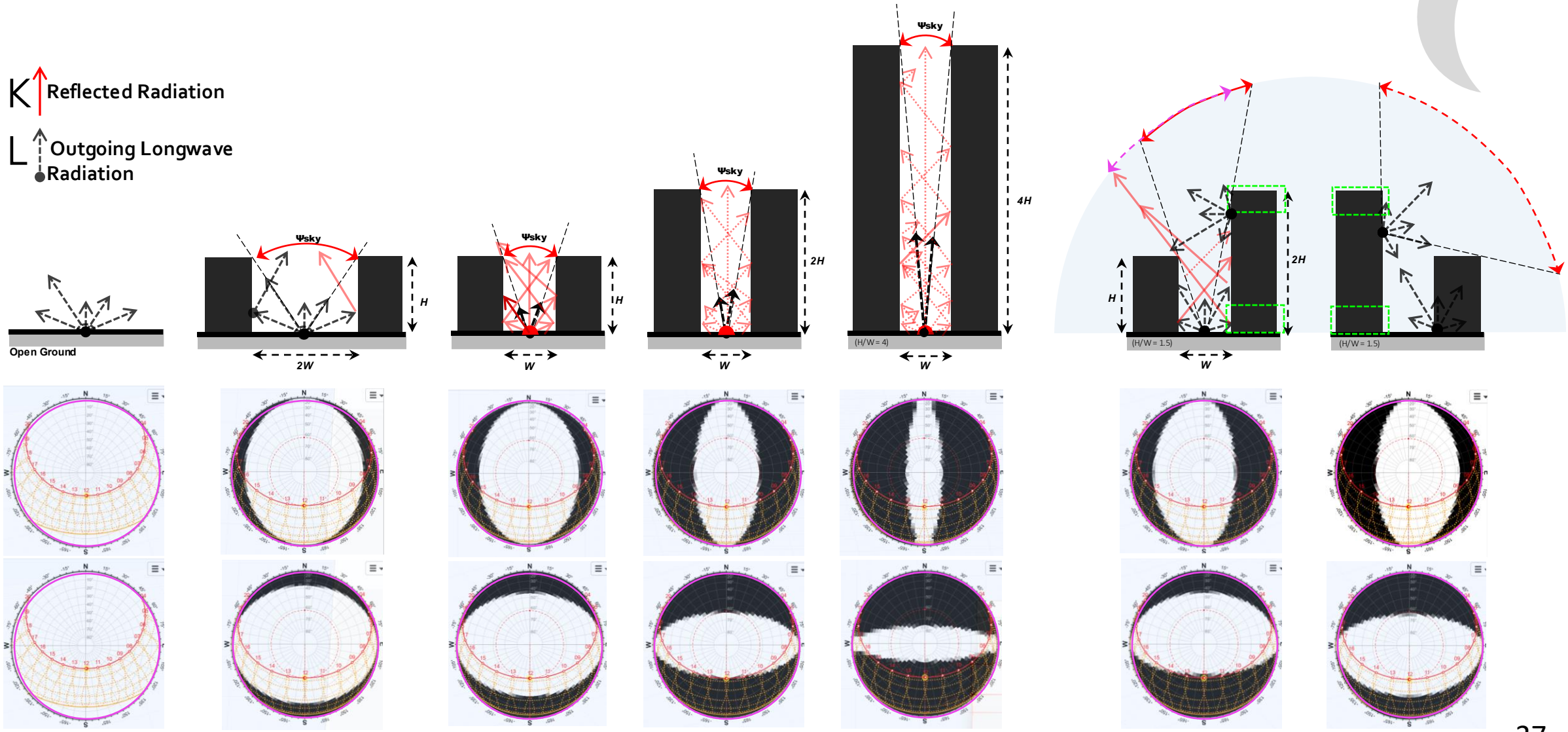
★ Built Form Matters

Sky View Factor (ψsky) is outgoing radiation



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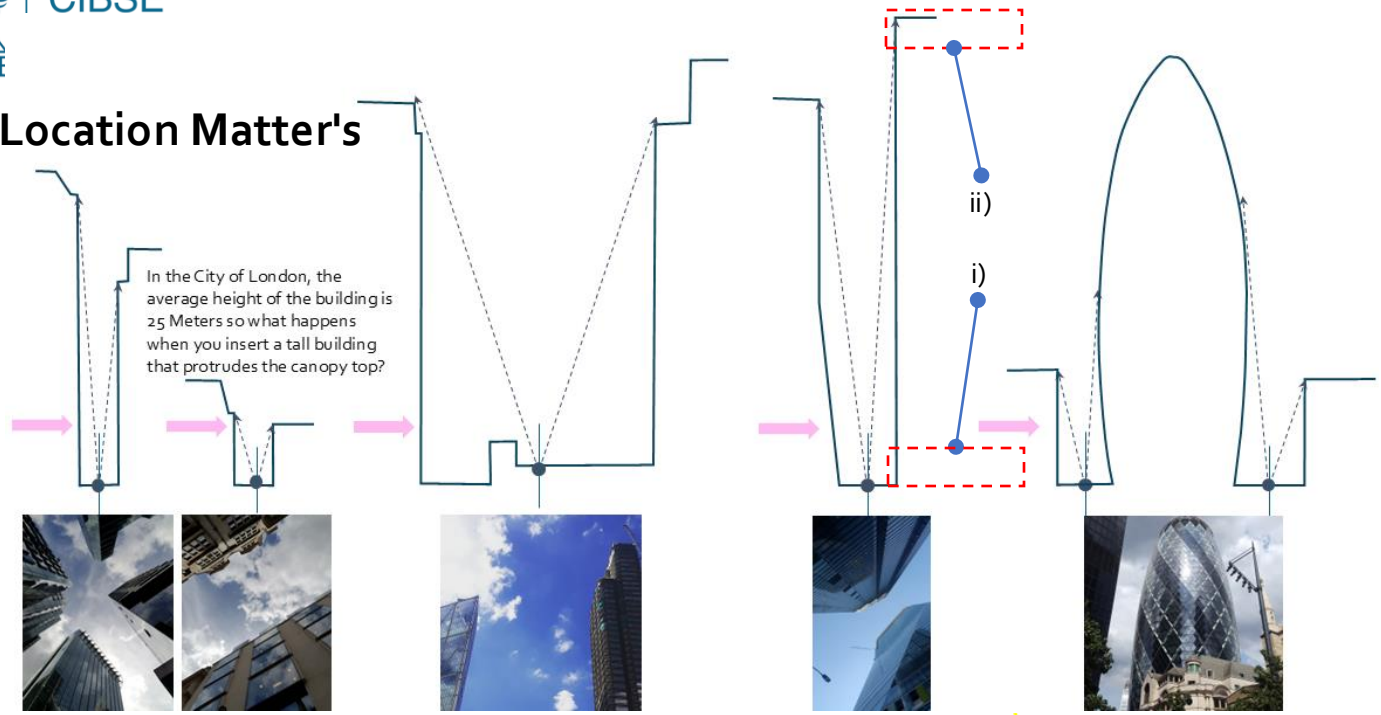
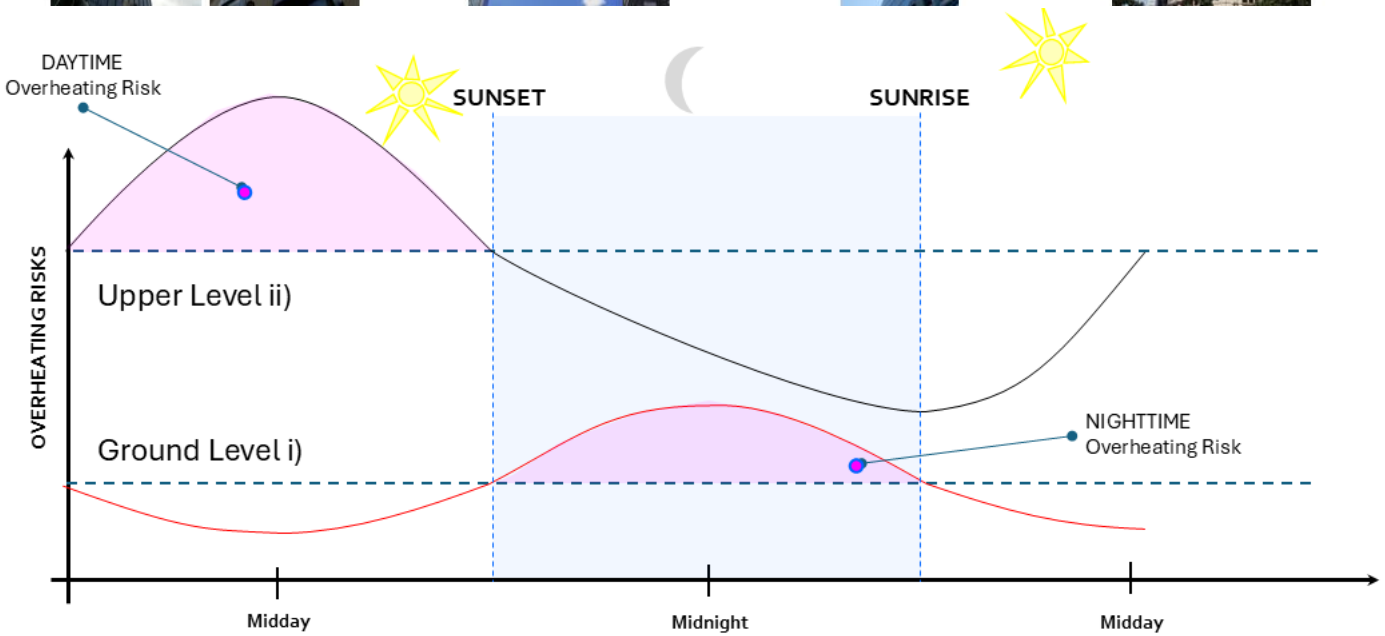
★ Location Matter's





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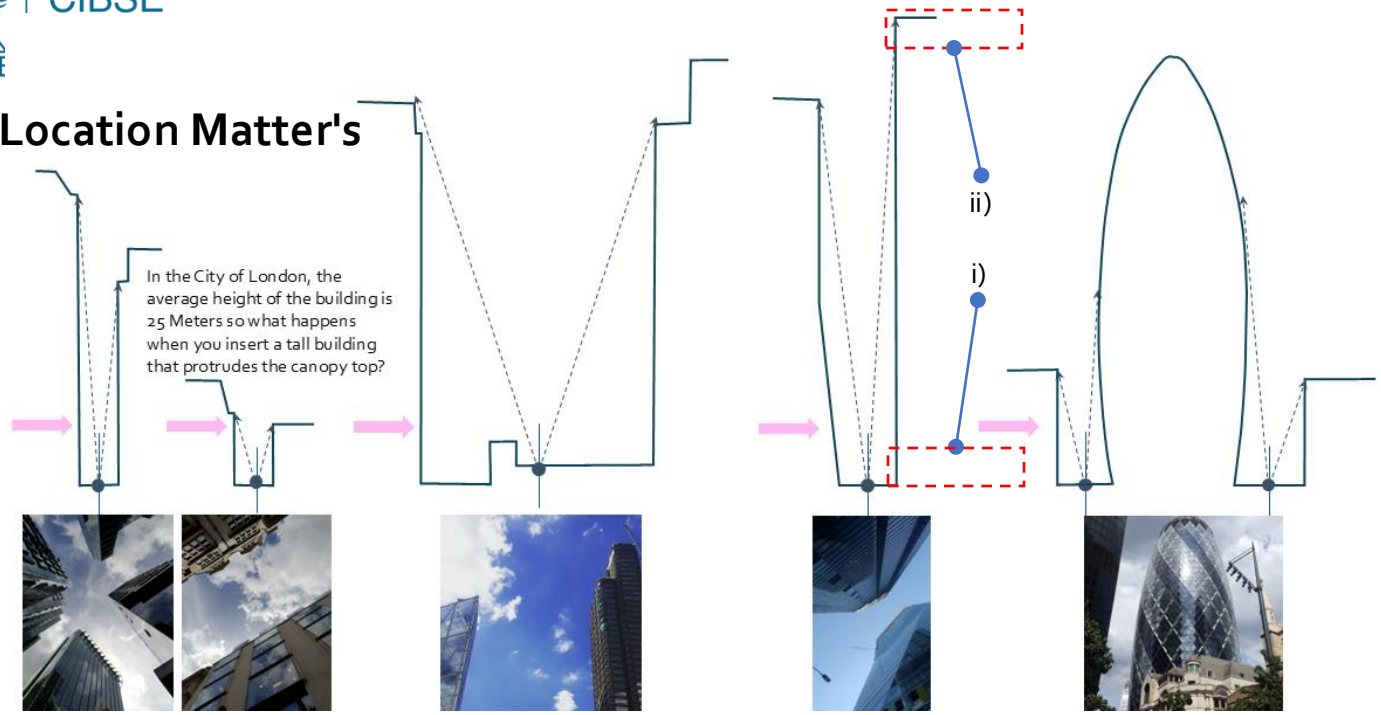
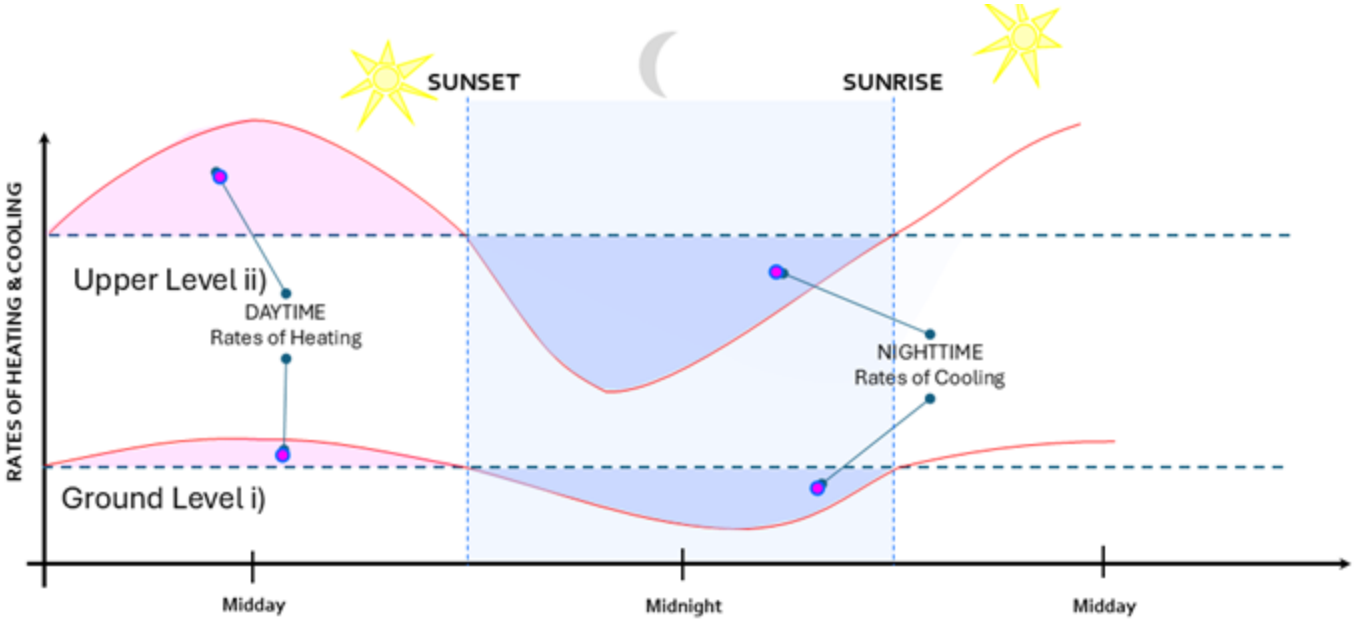
Regardless of location within the urban landscape

i) Ground-level spaces are often shaded during the day, reducing direct solar gain, but retain more heat at night due to reduced radiative exposure and limited air movement.

ii) Upper levels are more exposed to solar radiation during the day but can cool more effectively at night due to a higher sky view factor.

★ Location Matter's





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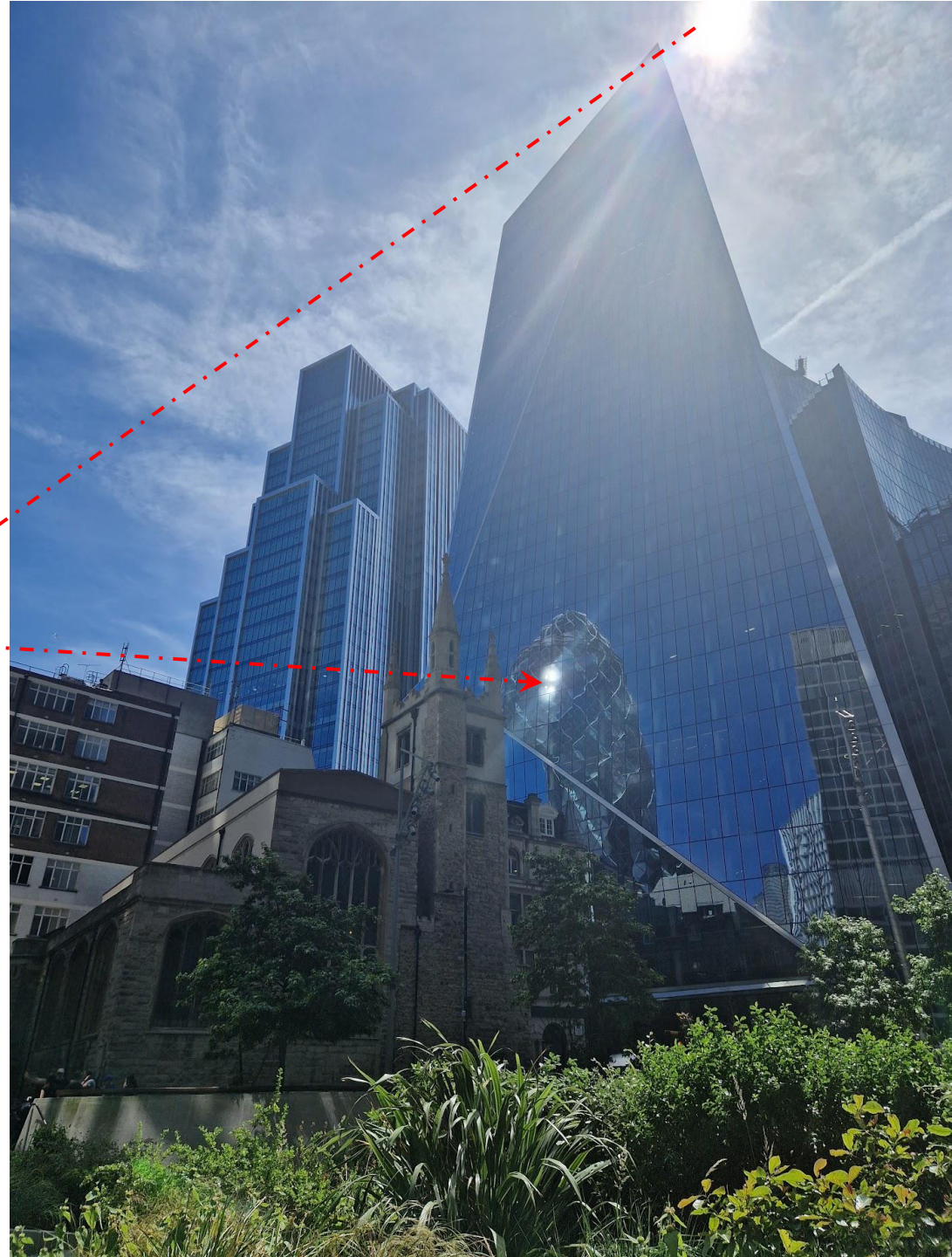
★ **If built form regulates urban climate, then architecture must be understood as critical climate infrastructure.**
Its effects are not incidental: buildings and urban layouts actively shape how heat, air, water, and light move through the city. These influences unfold across time, diurnally and seasonally, and vary with function, occupancy, and use. A form that cools by day may trap heat at night; an arrangement that ventilates well in summer may amplify downdrafts in winter.

Recognising this dynamic relationship means climate performance cannot sit at the margins of design, planning, or valuation. It must be integral to how we define urban value and how we make decisions. When architecture is treated as climate infrastructure, resilience, health, and long-term performance become embedded in the very logic of how cities are shaped and governed

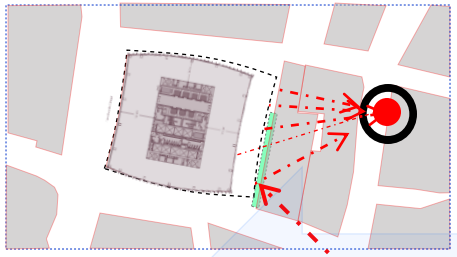


★ DAYTIME: Incoming Radiation

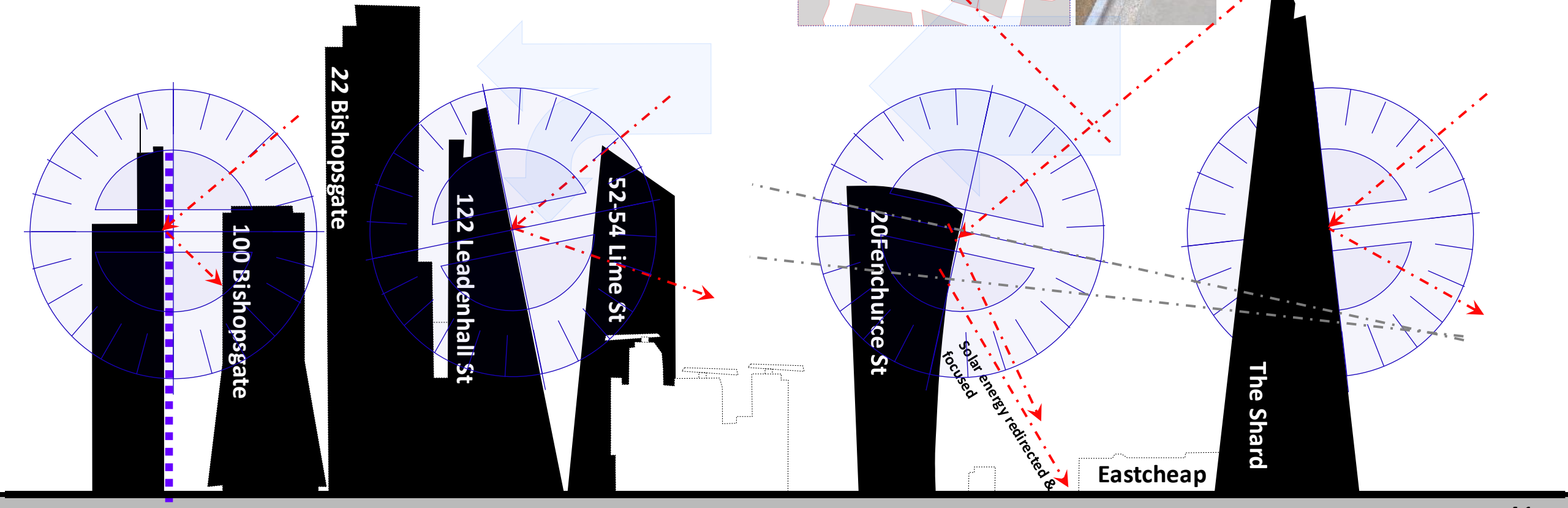
20FC demonstrates two significant but overlooked energy management parameters relating to the role of building form,

1) The concave convex and cantilevered form deflects solar energy away from the interior, making the building form more efficient in terms of cooling
2) The deflected beam has an energy implication of the surrounding setting

We don't know enough about built form effects YET urban landscapes are developing in such a way that their emerging morphology will have far-reaching and long-term impacts on both the outdoor climate and the ambient environment of other buildings that are yet to be accounted for



Area of entrance mat barbers shop Eastcheap, scorched by beam



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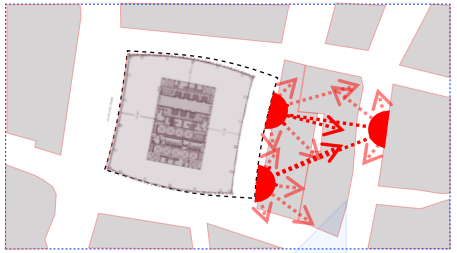
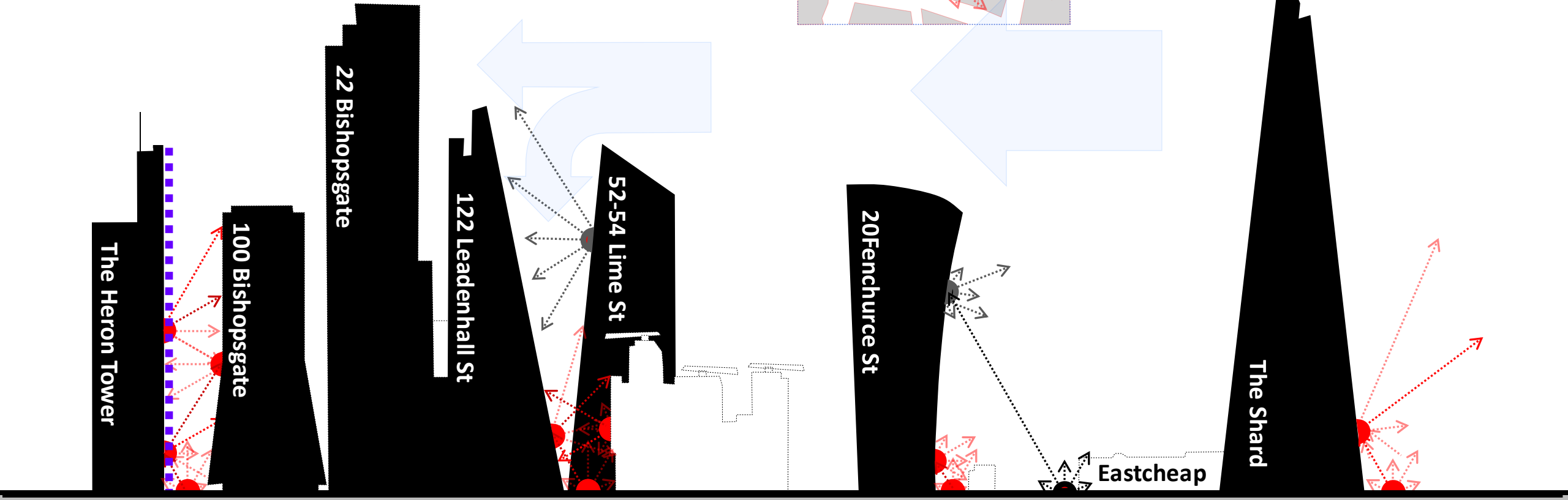
★ NIGHTTIME: Outgoing Radiation

at night, the effect of reducing the sky view is to increase longwave (terrestrial) radiation with the surrounding warmer urban surfaces, or the re-radiation of longwave radiation between surfaces. Thus, the heat remains 'trapped'. The net effect is to reduce the rate of night-time cooling, a critical factor in the formation of the UHI. This is a form driven effect!

some building forms *in - situ* may be better than others at facilitating the dispersal of trapped heat, minimising the localised nocturnal urban heat island effect





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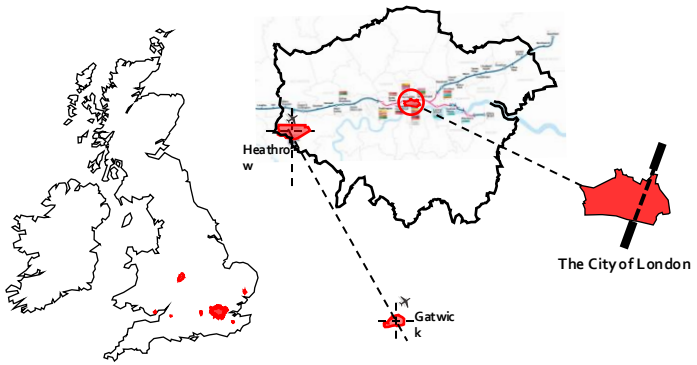
An Urban Climate Walking Tour an instructional technique for linking together diverse aspects of urban climate resilience: City of London



The City of London Urban Climate Walking Tour (established 2014) is a research led walk, which leads us through a series of urban streets and public spaces. Here, we explore some of the consequences of building and urban form on the background climate; alongside disseminating current thinking around the various urban climate effects.

The walk provides a unique perspective of our built environments by demonstrating the far-reaching and dynamic links between built-form, climate, energy and health and wellbeing across various scales. It offers an opportunity for us to discuss the quality of the spaces in terms of their physical form, materiality and social implications, alongside their influence on green infrastructure and thermal comfort, critical components of healthy resilient cities.

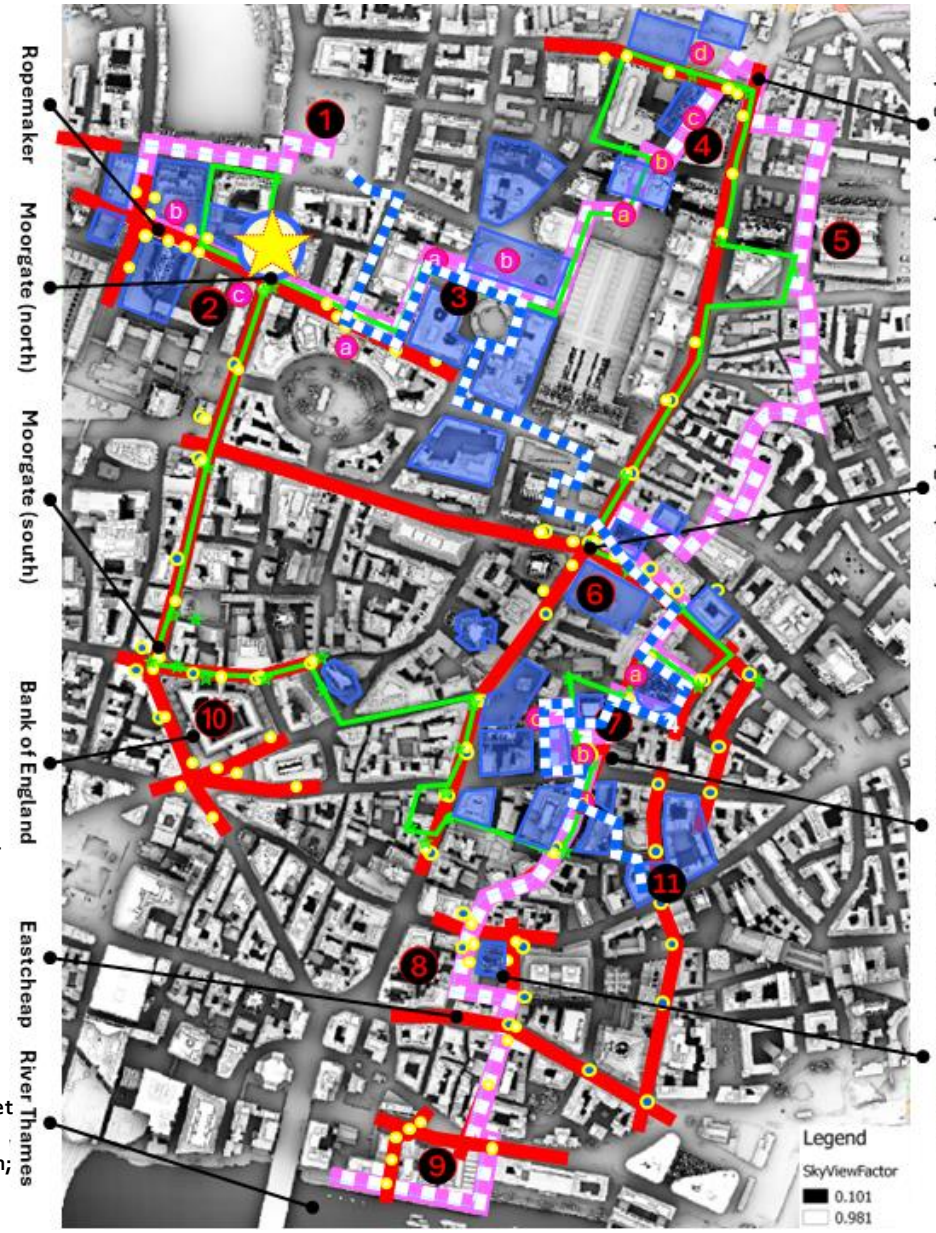
Designed to teach the principles of urban climatology from an interdisciplinary perspective, the walk is suitable for anyone with an interest in the climates of cities.

The walk takes less than 2 hours with plenty of time for discussion; the walk can be done under all weather conditions… In fact, the harsher the conditions the more dramatic the walk …. Sensible clothing and footwear are essential – this is not a walk in the park!

Meeting Point ❶ **The Martha Smith Memorial Water Fountain - 39 Finsbury Square, London, England, EC2A**
Finishing Point ⓫ 120 Fenchurch Street Roof Garden (if open)

(Urban Climate Short Route – 2.0 hrs)

Towns and cities where the climate walk is established include; The City of London; Paddington Basin; Fleet Street and the Inner Temple Gardens (Central London);
Tottenham, Haringey (Greater London); Birmingham City Centre; Canterbury; Cardiff, Wales; Ipswich Town; Reading; (UK); São Paulo, Brazil; Borlänge, Sweden and Rotterdam The Netherlands Upcoming walks planned for Lisbon, Portugal; Barcellona, Spain; and Glasgow, Scotland.



KEY

An open site
Intersection
Street
BLOCK
Single Tower
2 or more Towers
Cluster of Towers
Symmetrical
Square
Orientation Ø E/W
Orientation Ø N/S
South facing
Vegetation Good health
Vegetation Poor health
Water
Daytime Function
Nighttime Function

Tall Buildings
Urban Climate Walking Route: Day long activity
Background Site
Microclimate & Black Carbon Measurements PART 3
Areas of Interest
Microclimate & Nitrogen Dioxide (NO_2) Measurements PART 1, & 2

		Finsbury Square	Ø	LAYOUT	SYMMETRY	BUILT FORM	H/W	LCZ	GREEN / BLUE INFRASTRUCTURE	FUNCTION (day/night)
❶			○		★	□	<0.5	5	♈♈	○
❷	b	Ropemaker Place	♦	⎓		||	9	1	♈	○ ☾
❷	c	Upper Moorgate	✚	⎓	★	Ξ	1	2		○
❷	a	Eldon Place	♦	⎓		ΞΞ	2	2		○
❸	a	Finsbury Avenue Sq.	○	□		ΞΞ	1	2	♉	○
❸	b	5 Broadgate	⇊	□		ΞΞ Ξ	1	1	♈	○
❹	a	Exchange House	⇊	□		ΞΞ	1	2	♉♦	○
❹	b	Broadgate Tower	⇊	□		|	2	1	♈	○
❹	c	Worship Street	♦	⎓	★	|	3	1		
❹	d	Principle place	○	□		|	4	1	♉	☾
❺		Bishops Square (Spitalfields)	⇀	⎓		Ξ	1	2	♉♉♦	○
❻		110 & 100 Bishopsgate	♦	✚		||	7	2		○ ☾
❼	a	30 St Marys Axe	□			||	3	1	♉	○
❼	b	St Helens Square	□			||	8	1	♉	○
❼	c	Undershaft	□			||	8	1		○
❼	d	Lime Street	□			||	8	1		○
❽		20 Fenchurch Street	⇊	⎓		|	5	2	♉♈	○
❾		Thames Path; London Bridge	⇊			○		G	♦	
❿		Bank | Lower Moorgate	□	✚			1	2		○

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London’s Climate Futures: Beyond the Envelope | 2100 → 2050 → Now

We’re pleased to share details of an upcoming RIBA London event, developed in partnership with New London Architecture (NLA).

This half-day session explores how today’s design and planning decisions shape London’s resilience toward 2100, positioning architecture and urban morphology as **active components of the city’s climate infrastructure,** regulating heat, airflow, water, and light across scales.

Using a **future-back timeline (2100 → 2050 → Now)**, the session presents two contrasting climate trajectories for London, one connected and adaptive, the other fragmented and vulnerable, highlighting how spatial, ecological, and policy choices accumulate over time.

Monday 24th November 2025 | 08:30 –12:00

Curated by **RIBA London: North London Architects Group** | Chaired by **Mina Hasman** (Partner | Skidmore Owings & Merrill)

Speakers:
Professor Gerald Mills (UCD | WMO | IPCC)
Peter Massini (Future Nature Consulting)
Dr Ana McMillin FRSA (Broadway Malyan)
Lucy Atlee (TfL Places for London)
Morgan Lewis (Material Index)

Panel joined by:
Ivan Jovanovic (Atelier Ten)
Habib Khan (Meristem Design)

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Regenerative Design and Resilient Cities

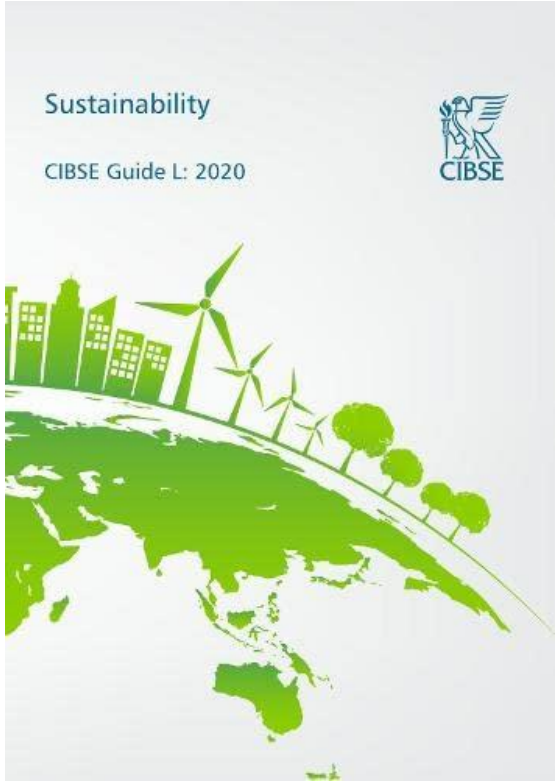
URBAN AREAS MUST DEAL WITH CLIMATE CHANGE IMPACTS

- PLANNING TOWNS AND CITIES
- MITIGATION
- URBAN CENTRES
- TRANSPORTATION

A WORLDWIDE IMPERATIVE

THE BUILT ENVIRONMENT

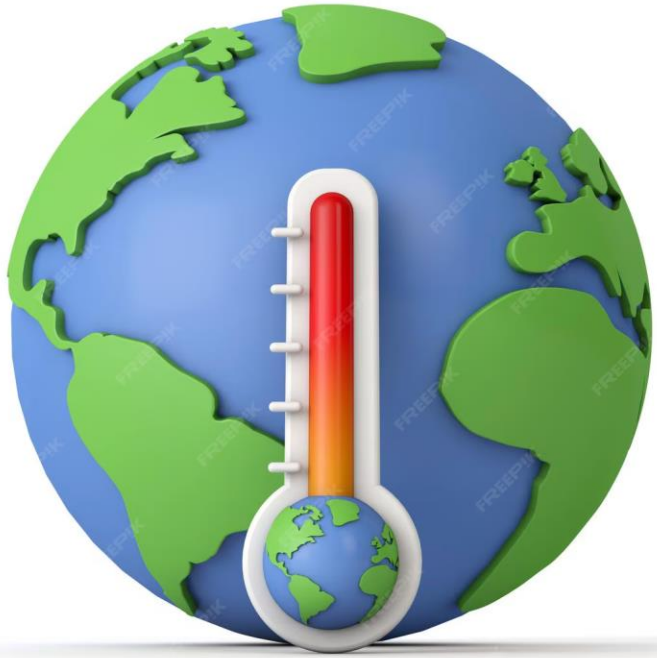
- EMISSION REDUCTIONS
- IMPROVE PROCESSES
- CUTS
- BUILT COMMUNITY
- CHANGE



THE PLANET MUST BE OUR PRIORITY

ACTIONS

- EQUALITY
- QUALITY
- INVESTING
- EFFICIENCY
- HOLISTIC APPROACH



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WE STILL HAVE A CHOICE

CONSIDERATIONS

- DISPLACEMENT
- BASIC SERVICES
- ECONOMICS
- CAPACITY

CONTENT.GOVELIVERY.COM

GLOBAL GDP IN MILITARY EXPENDITURE 2.5%

GLOBAL GDP IN CLIMATE MITIGATION IS 1%

SUMMARY

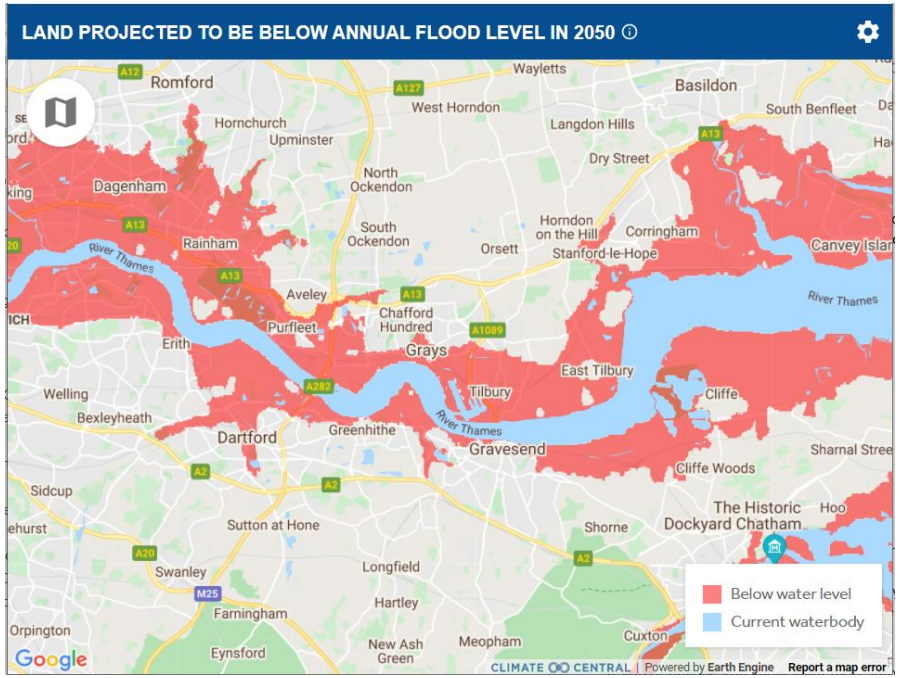
- PUBLIC AWARENESS
- INVESTMENT
- CAPABILITIES
- LEARNING V ACTION
- CLIMATE CONDITIONS
- BALANCE

United Nations Climate Change
Global Climate Action

DO WE HAVE A CHOICE?

TRANSFORMATION

- CLIMATE SITUATION
- ENERGY
- TEMPERATURES
- COMPARISONS
- 2024
- 1% ????



LONDON MUST BE CHANGED

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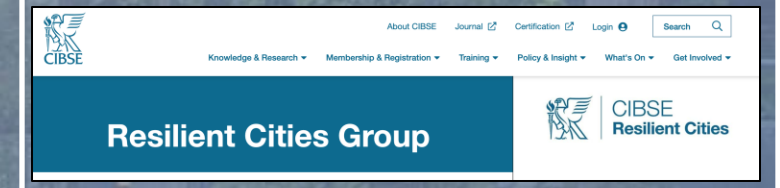
A Collaboration:
CIBSE Resilient Cities Group & UK Urban Environmental Quality partnership working with UK Wind Engineering Society



https://www.cibse.org/get-involved/special-interest-groups/resilient-cities-group/

https://www.cibse.org/**ukueq**

https://www.windengineering.org.uk

Come and join the conversation

Contact us

Regenerative Design and Resilient Cities

Professor Darren Woolf is an expert in building and urban physics, specialising in performance-led design, thermofluids and sustainable environmental solutions. With over 30 years of experience, he has provided strategic guidance on major projects across sectors including education, healthcare, transport, and commercial developments worldwide. He is currently Head of Building Physics at Wirth Research and a Visiting Professor at Loughborough University. Darren was a leader in the award-winning research initiative called AIRBODS which was set up in response to the recent pandemic. He is actively involved in professional bodies such as CIBSE, where he chairs its Resilient Cities Group and the UK Urban Environmental Quality partnership – a collaboration between RCG and the UK Wind Engineering Society. He is now also vice chair of its Building Simulation Group having led it over the last seven years. Darren has co-authored research papers and technical guidance such as on airborne infection risk assessment and CIBSE's Guide A on environmental design and AM11 on building performance modelling. His work supports climate resilience, energy efficiency, building design and healthier built environments.

Darren Woolf

Alice Poole is an Associate Partner at PA Consulting. She leads PA's sustainability approach for end-to-end Delivery and specialises in large complex programmes involving system-wide change, extensive political and stakeholder engagement, social impact, and high levels of risk. She has over two decades of experience promoting sustainability (sustainable and green growth, social change, strong institutions, resilience, climate change adaptation, mitigation), just transitions, and effective delivery in the UK and globally. She is especially focused on the adaptation/ mitigation interface – how to ensure cities and places incorporate broader resilience and strong social impact measures. Her experience includes leading the Governance and Public Sector international development work at ICF, work on fragile states and political economy (including urban water) at the World Bank, and as a Transatlantic Fellow at The German Marshall Fund (the latter both in Washington DC). She holds masters' degrees in public policy (Georgetown University) and an international MBA with distinction (University of Geneva) and is an incoming Trustee of the Centre for London.

Alice Poole

Dr Julie Futcher is a chartered architect and independent consultant specialising in climate-responsive urbanism. Her research explores how existing and emerging urban morphologies regulate energy exchanges in dense urban environments, focusing on built form as active climate infrastructure. At the core of her research are two strands that connect theory with practice and address how built form drives climate outcomes

1.Developing a decision-making toolkit to identify a wide range of interdependent built form effects on outdoor and indoor climates.

2.Developing a transformative, problem-based learning methodology that uses physical experience to deepen theoretical understanding of net-energy relationships.

Through these approaches, she bridges building and urban climate science, highlighting overlooked built-form outcomes and creating new pathways for regenerative practice.

Julie Futcher

Former CIBSE President and Director of Engineering and Energy for SPIE and Dalkia, **George Adams**, has been awarded a CIBSE Gold Award for his valuable contribution and services to the industry and the institution, CIBSE.

Having commenced work in what was the Building Services division of Matthew Hall Ltd almost 50 years ago, George completed a formal engineering apprenticeship and degree, setting him on his career path to his current position of Director of Engineering and Energy having completed many prestigious engineering design and build projects incorporating high emphasis on energy and quality.

During his career span, George has obtained a wide range of engineering experience from consulting work, design, site management, turnkey design and build activities through to engineering leadership of large teams, while supporting maintenance operations on a variety of key contracts. With a focus on innovation, technology and collaboration, George also continued to keep his finger on the pulse business with organisations such as CIBSE, BESA and The Engineering Council.

George's professional development has been within the building services field, where he has been involved in major projects, successfully implementing state-of-the-art technologies, contributing to significant off-site build programmes, life cycle engineering, energy efficiency and safety improvements.

As well as serving 6 years on the UK Engineering Council Board and being a long-term member of BESA, George was instrumental in establishing the CIBSE Resilient Cities Group, which focuses on adaptability, sustainability and resilience of cities in a broader context in order to raise greater awareness and knowledge on this challenge.

George Adams