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How does London become resilient to floods, heat and droughts? Follow these examples from around the UK...

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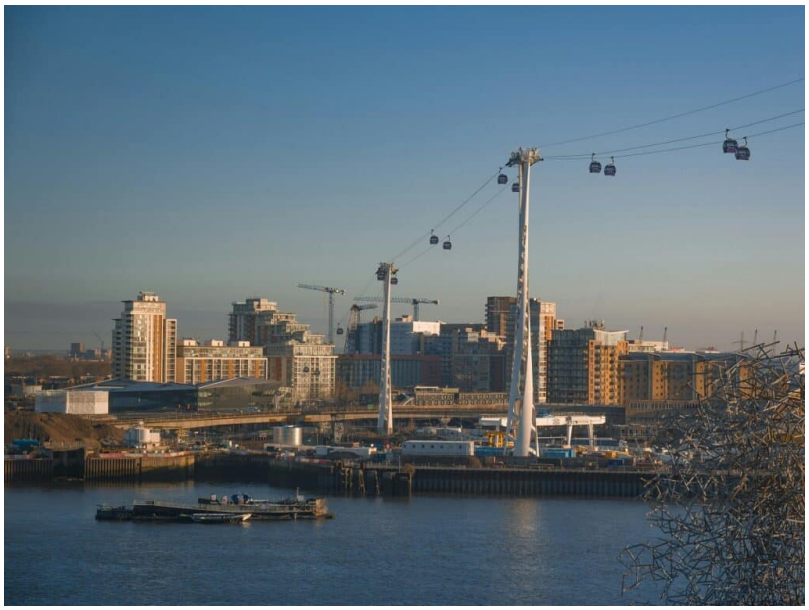

Climate solutions charity Ashden is delighted that the London Climate Resilience Review has been published (Wed 17 July), with recommendations on ways the UK can prepare for extreme weather conditions, including deadly heat and flooding.

This groundbreaking report says we need to do much more to prevent and prepare for heatwaves, flooding, storms, droughts, wildfire and other climate risks, and also says we must continue to do everything we can to cut harmful emissions so that these risks don't outpace our ability to adapt, putting forward 50 recommendations.

Dr Ashok Sinha, CEO of Ashden, a UK charity which brings organisations and local authorities together to share climate solutions and input evidence into the review, states that "making London resilient to the constant shocks of unpredictable and often extreme weather is a vital planning exercise that cannot be ignored. This review is essential, timely, and must be acted upon."

Ashden's evidence to Emma Howard-Boyd, author of the London Climate Resilience Review, took the form of examples of a number of best practice solutions to climate adaptation and policy recommendations, from within London and drawing from evidence from businesses and local authorities around the UK.

Dr Sinha, who is also Chair of the London Sustainable Development Commission, continued: "Londoners, like everyone in the UK, are exposed to very serious risk as a consequence of global heating. Those living in the most densely occupied, least green or blue spaces are particularly vulnerable to extreme heat and

increased flood risk and are usually also some of the most disadvantaged Londoners.

“But there are a whole host of best practice solutions to climate adaptation in operation now that we can learn from and scale up, to make sure that we can reduce the impacts of severe weather, or when these climate knocks happen, will help communities to deal with them or avoid them.”

Suggestions range from using ‘near free’ ground source cooling for homes at risk of excess heat, to creating new wetlands and green spaces in urban areas that prevent flooding, protect nature, and tranquil green spaces and crucially – jobs – in the city (see examples below).

Ashden suggest a raft of policy changes which would help support climate adaptation, including a requirement for rain gardens/wetlands/ponds to be created in areas of high surface water flood risk, for councils to have to set targets for protecting biodiversity and nature, and for government to provide a bank of ecology experts for local authorities to refer to, as well as convening public and private experts in green finance to explore potential use of Local Climate Bonds for adaptation projects.

With reference to cooling, Ashden propose that councils insist that new build homes, offices and schools incorporate passive cooling and/or natural ventilation into design, and to encourage the uptake of smart thermostats by landlords to monitor tenants during periods of excess heat. Boreholes for ground source heating can also be used ‘in reverse’ to cool homes and offices (see Kensa Heat Pumps example below).

“Resourcing of sustained community engagement over multiple years will be essential,” says Dr Sinha, “and linking to green skills and job opportunities throughout.”

Ashden has already created an Adaptation Network for council officers, bringing local authorities together to work on climate adaptation in a unified way. It also suggests setting up London-wide data mapping of climate risks, deprivation and vulnerability.

Four examples of climate resilience around the UK that could be replicated in London and elsewhere:

- Thames 21/Enfield Council in North London are protecting communities from extreme weather by bringing new life to neglected waterways

Enfield in North London is home to Salmon Brook, Pymmes Brook and Turkey Brook – three waterways feeding the River Thames. They currently transfer flood water to the southeast of the borough where homes are flooded in ‘extreme’ events. Works to narrow the channel and increase filtration into the ground in the rural headwaters is reducing this risk, as well as restoration of rivers in parks in the local areas helping to store flood waters in the urban areas.

In response, Enfield Council and Thames21 (winner of the 2023 Ashden Award for natural climate solutions) have helped communities to restore these waterways and create natural features that will lower the risk of flooding using newly created wetlands, rain gardens, and new woodlands. Local volunteers power these projects and are trained to become citizen scientists, champions and advocates for Enfield’s rivers.

The mental and physical health benefits to residents are a huge extra element of the project, as well as upskilling and job creation in nature-based green skills.

Thames21, along with other environmental NGOs and relevant agencies, input into the London Climate Resilience Plan.

“Thames21 is one of London’s leading environmental charities, tackling the climate and biodiversity crisis by restoring rivers across London and the Thames Basin. The Enfield Chase Woodland Restoration Project has been a great success. Through a collaborative effort with residents, we have restored rivers and created new ponds, woods and wetlands to build climate resilience in north London”, said Chris Coode, CEO at Thames21.

“We know that healthy rivers are key to mitigating the most acute effects of climate change, including flood and water scarcity, restoring biodiversity and creating beautiful blue-green spaces for people and wildlife. Overall, we want to rebuild the bond between communities and their rivers. Together we can deliver powerful social impacts like improved wellbeing, community cohesion, and greater equality of access to good quality green-blue spaces for people to enjoy.”

- Liverpool’s Urban GreenUP project shows how nature-based solutions not only protect the city and boost biodiversity but also decrease absenteeism and boost health

Liverpool City Council’s Urban GreenUP project includes 44 different nature-based solutions that have been installed across the inner city, with new plant-packed floating islands created in ponds and waterways to boost biodiversity, and rain gardens and green travel corridors introduced.

Headline achievements demonstrate the range of economic, social and health co-benefits possible – for instance, 11,700 households and 23,500 residents have better access to green space, and new green spaces were used by 500,000 local users.

Businesses also saw the benefits with 92% of residents saying that planting trees attracts business. The new green spaces also brought in 100,000 visitor days of additional tourism value, and crucially, correlated with less employee absenteeism in demonstration areas, equating to a £56,700 saving.

Physical and mental wellbeing increases included 30% increase in adult physical activity associated with greater green space, particularly walking levels and an 18% increase in adult mental health wellbeing.

“Liverpool’s URBAN GreenUP success in retrofitting nature-based solutions in the city focused on delivering what was achievable and being prepared to accommodate change,” said Juliet Staples, Senior Project Manager with Liverpool Council. “On a practical level this meant robust procurement and contract management which underpinned a strong delivery framework, and partnership working that involved consultation and collaboration between community, consultants and the City Council.”

- Kensa Heat Pumps – using ground source heat pumps to cool buildings as well as heat them

The ground beneath our feet can be both a source, and an inter-seasonal store of heat. In the summer the ground can give passive (ultra-low-cost) cooling, with the warmed ground then giving even more efficient heating the following winter.

2021 Ashden Award winner Kensa makes and installs networked ground source heat pumps, linked by shared ground loops. As well as super-efficient heating, they can provide either passive or active cooling just by adding cooling components to the design. In passive mode, the power consumption is extremely low, giving comfort cooling at a fraction of the cost of air conditioning. This will be increasingly important for residents with health vulnerabilities as heatwaves increase over time.

Kensa's networked heat pump solution is applied in many building types, from new build housing to villages to retrofitting residential high rise blocks. The company is particularly proud of its impact in high rise social housing, where tenants have been both lifted out of fuel poverty and given greater comfort and control.

"Everyone knows heat pumps are the answer to heat decarbonisation, but Kensa's solution of shared ground arrays and networked ground source heat pumps can do much more than just high efficiency electric heating," says Chris Crookall-Fallon, Senior Project Lead at Kensa.

"We can also capture waste heat from many and varied sources – for example solar panels, data centres, or supermarkets, bringing circular economy thinking into heat. And we can naturally cool buildings with very little energy consumption – minimising the health impacts of more frequent heatwaves."

Hull City Council – bringing the community along in local flood response strategies is vital, but not easy

Approximately 40% of Greater London's surface area is impermeable and around 80,000 properties are at risk from deep surface water flooding. The city of Hull provides an example of how to respond but notes that community engagement is a vital, but not always easy, element of success.

Hull sits in a floodplain and while it is protected by grey infrastructure flood defences there is a risk that these could be breached, putting many local people at risk of flooding.

To build physical resilience to flooding, Hull City Council is designing a series of sustainable drainage systems to be put in place across the city and surrounding villages. The council's flood risk team is co-designing multiple aspects of the sustainable drainage systems with residents on what systems should be used and where they should be placed.

The project is fundamentally about behaviour change, and shifting mindsets from a view that water is 'out of sight and out of mind' to seeing it as a positive resource, one that can be used to create multiple co-benefits such as areas for local food growing, calmer streets, and a safer environment for young children playing outside.

"A key learning point for us is that the things we thought would be important to communities such as flood resilience and creating ecology and biodiversity are not always a priority for them," says Rachel Glossop Flood Risk Planning Manager at Hull City Council.

“We are using our Hull and East Yorkshire volunteers as flood ambassadors to help us raise awareness and understanding of flood risk and how we can all be more resilient. It’s vital to take time to build up the relationships and trust for successful community participation.

“We are using our Hull and East Yorkshire volunteers as flood ambassadors to help us raise awareness and understanding of flood risk and how we can all be more resilient. It’s vital to take time to build up the relationships and trust for successful community participation. The reality is that funders timescales and expectations often do not align with what needs to happen in the community, which is always a challenge. Hopefully this review will highlight the need for more understanding of the time and effort needed by local authorities trying to manage these changes.”