

PARK LIFE

An improved public realm can play a significant role in curbing climate change impacts by reducing urban temperatures and improving connections between green infrastructure,

Huw Morris reports.

Urban green spaces are often taken for granted, yet they are the lungs that enable towns and cities to breathe. They give a sense of identity and are often our most valuable resource - a natural infrastructure as important as roads or sewers.

They also happen to be a key battleground as climate change takes effect. According to the UK Climate Impacts Programme (UKCIP), the 20th century represented the warmest 100 years in the past millennium. In that time, temperatures rose 0.6 degsC and the 1990s were the warmest decade.

UKCIP predicts that by 2080 temperatures will rise by 3 degsC in winter and 5 degsC in summer. Annual rainfall will drop by up to 50 per cent in summer and increase by up to 30 per cent in winter. The number of winter depressions will increase from around five a year to eight by 2080, making storms and gales more likely. All of this will have serious consequences for green spaces.

"Urban green space in its many forms - private back gardens, woodlands, allotments, verges, public parks and gardens together with rivers and other bodies of water - represents a significant percentage of the total urban area. It reacts very differently to environmental conditions compared with hard and impermeable man-made structures and surfaces," says environmental charity GreenSpace general and business development manager David Tibbatts.

"Green spaces and the often accompanying tree canopies slowly hold and absorb storm water, allowing it to seep back into the water table rather than having to be controlled and managed through expensive drainage systems. The tree canopy also helps to remove harmful pollutants and particulates from the air," he explains.

"Perhaps most importantly, man-made structures and surfaces heat up and add to the ambient urban temperature, creating the heat island effect. That is why towns and cities are always hotter than the surrounding countryside. The green and blue spaces help cool it down and the tree canopy provides vital additional shade. Try lying down on some tarmac and then lying in long grass on a hot summer's day. The difference in surface temperature becomes immediately obvious."

However, according to recent studies carried out by sustainability consultancy Faber Maunsell, the quality of life in urban areas is at risk if action is not taken to adapt public spaces to climate change. The research, part of a series of in-depth case studies prepared for **CABE Space**, looked in particular at how urban areas will be affected by overheating, changes in water availability, flooding and land instability. It also examined how well equipped towns and cities are to respond through planning.

Faber Maunsell's report argues that good planning is vital if we are to understand the risks of climate change and take action. Approaches to the challenge include the use of green spaces and large canopy trees to cool the air, renaturalisation of water courses, sustainable drainage and creation of flood plain forests.

"This is a crucial time for many of the UK's cities," says the consultancy's sustainable development group associate director Rob Shaw. *"Poor planning and decision-making today will leave many of our cherished urban spaces at risk of blight over the coming decades. Increasingly severe and prolonged high temperatures will either drive people out of our towns as their quality of life deteriorates or they will be forced to install energy and carbon-intensive air-conditioning units."*

Tibbatts points out that air handling and air-conditioning equipment have a significant impact on urban temperatures because they generate heat. As the number of such units in use is dramatically rising, it follows that the ability of urban green space to cool the air will become increasingly critical.

"Urban green space combined with blue space provide sustainable drainage, air quality and air cooling systems while providing recreational opportunities and beautifying our cities," he argues. "A city without waterways and green spaces would be unbearable. That is not just because of the impoverishment of the city's social, physical and cultural base. It would literally be physically unbearable and increasingly moving towards the uninhabitable."

However, **green - and blue - spaces** will only contribute to the battle against climate change if they survive. There are considerable doubts over the future of many flora and fauna in a hotter climate. This opens up a whole new field in climate change skills for built environment professionals, who will have to learn new techniques to help green spaces adapt.

So what can planners do?

Tibbatts argues that recognising the role urban green space can play in mitigating some of the worst effects of climate change is a critically important element of sustainable urban development. Green spaces will need to be conserved and improved by increasing canopy cover or creating water-holding bodies, he believes.

Ecosystems are becoming ever more fragile as the climate changes and a comprehensive approach to managing the entire green and blue infrastructure is needed at a city-wide, sub-regional and regional level.

"A greater connectivity between spaces needs to be established, which will help with biodiversity and can also help in the creation of sustainable transport networks and improve access in general," maintains Tibbatts.

*"New developments need to bring investment in existing green space and the creation of good-quality, well-designed, multifunctional green space. It must be capable of adapting to climate change and immediately ready to help mitigate the effects and take its place in the transport and biodiversity equation. **The gradual erosion of green infrastructure, from concreting over front gardens to create parking spaces through to the sale of school playing fields and public spaces, needs to stop - and quickly.**"*

In Tibbatts's view, new development will have to include best practice as standard, while cutting-edge initiatives such as turf roofs, grey water use, sustainable transport links and sustainable urban drainage systems will not only become expected but the norm.

"Park management teams will always welcome support from sympathetic planning departments. The two need to work side by side in developing effective open space strategies and securing political support and commitment," he concludes.

8 August 2008

PLANNINGresource
First for planning, housing and regeneration