

# ZERO and liveable cities CARBON BRITAIN

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The pressures of population growth, finite resource and food supplies, increasing energy demand and climate change all impact on the way we live and work, and potentially have a negative effect upon our wellbeing and quality of life. “Living as we are and scaling back simply will not work”, writes Professor Chris Rogers, principal investigator for the EPSRC-funded Liveable Cities research programme. What he means is that we cannot live as we are and make only minor, incremental changes to some of our activities without causing further damage to the planet and our quality of life. We need to fundamentally, and radically, reorganise our activities, reassess our approach to living and working, and readjust our expectations for our own wellbeing. Such a paradigm shift can’t happen overnight, but the urgency for it is also apparent. Liveable Cities and Zero Carbon Britain (ZCB) are both striving to show how this necessary and positive change can be achieved.

Cities play a vital role in shifting activities and expectations, with rapid urbanisation increasing worldwide. The United Nations predicts that between 2011 and 2050 the world’s population will increase from 7 billion people to 9.3 billion people, with urban areas absorbing all this growth as well as attracting people from rural populations. The UK’s urban population is already 90% of its total population, and this is expected to rise to 92% by 2030 (see <http://www.citymayors.com/statistics/urban-population-intro.html>).

What road will lead us to low carbon, resource secure cities without compromising our wellbeing and muting our aspirations – to what we might call a ‘liveable city’? What are the critical factors that must be addressed if we are to reach this end state?

We must keep in mind that a liveable city, much like a sustainable city, is not an end state. We will not reach a point at which we can say we have achieved a liveable or sustainable city, as their definitions are contemporary with and depend on the needs and priorities of future generations – which we cannot know. People are carbon emitting life forms (carbon we do not count – at the moment) and it is therefore impossible to be ‘zero carbon’ without depopulating the planet. This creates opportunities for cities;

encouraging a cycle of almost continual reassessment and reinvention: they can strive to be *low carbon* and there will always be opportunities to further reduce carbon emissions. We are on a journey. We must ensure we select the correct route to our destination, even if we know that the destination we perceive now is characterised by being merely a staging post towards a new perception and is not a fixed point at which we will arrive with nowhere further to go.

To do so we must first identify and understand the critical relevant aspects of cities and how they interact. Then we must develop robust and repeatable ways of measuring, monitoring and assessing their performance.

Having numerous datasets that describe a city and its activities will not necessarily lead to a better understanding of that city or to sufficient intelligence about that city to inform our actions. Not all data is informative and so we must filter out and make use of the information that will allow us to identify the best route forward. To achieve a low carbon liveable city we need to understand the relationship between carbon, resource security and wellbeing by focussing upon what is required in order that people can survive with an improving quality of life, health, economic and social wellbeing to ensure the viability of future generations. Resources that can dominate this thinking include the people themselves and the energy, water, waste and food on which they rely.

An example of a particularly useful way of drawing together carbon and resource security is to understand the energy and resources flows (including their drivers) within and through a city. Such flows do not exist in isolation and must be scrutinised within the wider context of a city’s economic, political and governance contexts and drivers. Furthermore, the flows will impact upon the ability of a city’s ecosystem to deliver services and support biodiversity as well as societal wellbeing, aspirations and mobilities (the movement of people, objects and information).

Predictive visions of the future and incremental changes are unlikely to deliver a low carbon, resource secure, liveable world by 2030. What are needed are radical visions for radical changes: radical

re-visioning of engineering within a better understanding of the dynamics of wellbeing and social aspirations. In other words, envisioning desired futures without being constrained by current predictions, political reality or indecision – starting with a blank sheet.

From these future visions we can define and describe the paths that lead us back to the present. There will, of course, be obstacles to overcome and they may seem insurmountable, impossible in fact, but overcoming them is of paramount importance. Agile and innovative thinking is needed to build exponentially upon current, worthwhile efforts and the solid foundations that ZCB lays down.

Determining how to meet these challenges is the focus of the Liveable Cities programme of research ([www.liveablecities.org.uk](http://www.liveablecities.org.uk)).

#### About the authors:



Transforming the Engineering  
of Cities to deliver Societal  
and Planetary Wellbeing

Liveable Cities is funded by the EPSRC ([www.epsrc.ac.uk](http://www.epsrc.ac.uk)), led by Professor Chris Rogers at the University of Birmingham, Professors Brian Collins and Nick Tyler at UCL, Professor Rachel Cooper at Lancaster University and Professor AbuBakr Bahaj at the University of Southampton.