CITY2040

The pressures on UK cities

An opportunity for change

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Contents

Acknowledgements

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the Edge is a multi-disciplinary, campaigning built-environment think tank, working on issues that cut across many disciplines in the industry including the impact of construction on the environment, city planning, health and wellbeing and professionalism. Established in 1995-96 as the result of an initiative by Jack Zunz, then Chair of The Ove Arup Foundation, the Edge was formed in order to better connect the professional institutions working in the construction industry. Starting with the Royal Institute of British Architects (RIBA) and the Institution of Civil Engineers (ICE), the institutions the Edge formally works with have expanded to include the Chartered Institution of Building Services Engineers (CIBSE), the Royal Institution of Chartered Surveyors (RICS), the Chartered Institute of Building (CIOB), the Society for the Environment (SocEnv) and the Institution of Structural Engineers (IStructE). the Edge is also an Associate Member of the Construction Industry Council (CIC) and is supported by The Building Centre and the UCL Energy Institute.

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Contributors

This report was co-authored by the following Edge steering group: Simon Foxell, Sue James, Oliver Smith, Chris Twinn, Andrew Scoones and project coordinator Helen Evans.

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We would also like to thank all of the speakers who addressed the six evidence-taking sessions and the audience members who contributed to the discussion. The names of the chairs and panel members for each session are listed at the end of this report (see section Collaborators). Further details of the individual sessions that took place are also available on the Edge's website www.edgedebate.com.

Opening Statement

Adam Marks
Partner,
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Ashley Wheaton
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The challenges we all face in anticipating, navigating and creating our cities have always been at the heart of our commercial real estate strategies. Of course, when we embarked in September 2019 on a new thought leadership project to imagine the future, we could never have imagined that only six months into our work, our global lives would be dominated and distorted by the pandemic. However, Covid-19 has made us all even more sensitive to our built environment, and those challenges in articulating a pathway to a brave new post-pandemic world have only become increasingly critical.

In partnership with the Edge, we were determined to ensure that when considering City 2040, we didn't lean towards easy but incomplete solutions to the well-rehearsed problems of city living. Instead, we challenged ourselves to identify a number of key areas that must be addressed, and looked for meaningful answers to what our future cities must look and feel like. This report pulls together and attempts to make sense of the very latest industry and academic thought when it comes to the creation of the future cities that we will be living, working and, we believe, thriving in.

By focusing on four key and distinct themes (**Equity and exchange**, **Clustering and proximity**, **Public and private land** and **The impact of clean air**), we have sought to bring some clarity to all the white noise on city development, and draw conclusions on what shape our cities might take, and what purpose they might serve in the near future. Together, we have hosted a series of sessions, including one for each theme, which sought to explore and interrogate our possible, even probable, direction of travel.

But we did not stop there. It would have been wrong to present our conclusions on these themes without also stress-testing them for financial robustness. We all know there are clear social and environmental imperatives for change, however constructive outcomes require economic sustainability and collaboration across the private and public sectors.

This report demonstrates that without intervention, it is unlikely that our future cities will be "fit for purpose". We would never suggest that this Report delivers all the answers, but working together we can provide at least some of them. We believe that the conclusions drawn here will engender, stimulate and release the further debate needed in order to find those remaining answers. Here's to that debate.

Adam Marks

Ashley Wheaton

Foreword

Helen Gordon
Chief Executive Officer,
Grainger plc

A year on from the advent of the global COVID-19 pandemic, the crisis has changed the way that people live and work in cities at an unprecedented scale and pace. Yet the questions that city makers, planners and policy makers face today are, for the most part, evolutionary. While short-term lockdown restrictions are unlikely to convert into a permanent reversal of agglomeration in cities, the COVID-19 crisis has accelerated some urban trends that were already in motion, such as increased remote working and online shopping, and it has also imposed thinking space on city makers – forcing many to step back and review long-established and perhaps outdated practices.

However, the pandemic is not the only risk likely to shape future cities – the impact of potential climate breakdown remains one of the biggest risks faced by the world in the next 10 years. The need for cities to shift to net-zero carbon solutions must now be urgently addressed to meet the UN's Sustainable Development Goals and avoid disaster.

There is a window of opportunity open now to tackle both crises. Cities went into the pandemic with different economic strengths and weaknesses, different levels and types of employment and different industries; all of these factors will affect how places begin to recover once the pandemic is finally behind us.

The need to address the economic fallout from COVID-19 is clear, but there are ways of doing this that can double as a response to the climate emergency.

This timely report sets out an industry-led research initiative about factors that will affect the shape of UK cities in 2040, through a study of the big issues that are currently transforming our urban environments. It examines the physical and social attributes of cities in relation to climate vulnerability, growth, health, resource efficiency, technology, governance and rights to land.

This report presents the outcome of a series of thought-provoking leadership debates, identifying key developments in future thinking and practice amongst local and national policymakers, built environment professionals, institutions and businesses – addressing the new and changing infrastructure of cities and their impact on the lifestyle, housing and wellbeing of citizens.

The report is not designed to comprehensively detail all aspects of the 'future city'. Rather, the project presents a series of new and emerging ideas and places these in a critical commercial context.

A common theme is that cities of the future will need some degree of planned intervention if they are to continue to thrive as diverse ecosystems of mixed-value and symbiotic land uses, and that the stewardship of future cities will be more successful if addressed collectively. This may require additional training, funding and resourcing of city planners as facilitators to ensure effective community involvement – especially in the wake of the climate crisis. And if there is a single message, it is that social infrastructure and green space at the local neighbourhood level is essential to supporting a vision for thriving, multi-hub cities in 2040.

Helen Gordon

Executive Summary

Cities matter to the UK. They are the concentrations of the UK's population, trade, commerce, cultural and social life. They are also the sites where most of the UK's future growth, both population and economic, is forecast to occur. The UK's future is now closely linked to that of its cities[1].

Government Office for Science

The pressures on UK cities: an opportunity for change

Historically, successful cities have been characterised as places of exchange and human interaction. They are centres for trade; cultural melting pots offering something for everyone, fostering innovation through proximity and cross-pollination of ideas. UK cities currently account for around 60% of the country's economic output and, since the resurgence of major city population growth in the 1990s, the country has seen a dominant pattern of urban population growth take hold. In 2020 however, the Covid-19 pandemic sharpened focus on the profound influence of cities: placing them in a less favourable light; revealing risks to living cheek by jowl and brutally exposing how cities are failing the most vulnerable in society.

Now cities are remarkable engines of re-invention. They have long traditions of transforming to build resilience against public health crises, whether by introducing sewage systems, legislating for clean air, providing public parks or even mandating housing regulations to improve living conditions.

Crucially, this ability to innovate will also be essential to the future success of cities as the biggest contributors to climate change and the bearers of some of its worst impacts. Understanding the key trends in urbanisation as they are likely to unfold over the coming years is crucial to ensuring that our cities remain inhabitable, appealing and that national climate and ecological targets are met.

About this research

This study aims to define a vision for a thriving future City of 2040 and to consider what needs to happen, in terms of urban planning, government policy and investment strategy, in order for us to get there. The specific objectives of the report are to assist policy makers by setting out a shared vision for UK cities in 2040 and recommending a series of problem-solving approaches to support well-integrated city making with lasting benefits.

Initial ideas were tested through a series of online thought-leadership discussions with a diverse cohort of industry experts which took place between November 2020 and April 2021 (see section Collaborators). Six debates explored emerging patterns of living and working in cities, the impact of the Covid-19 crisis and aspirations for a 'green/clean' recovery as well as other longer-term concerns, in particular those relating to the likely potential for climate breakdown.

Over 600 experts participated in the debate series, including a diverse range of city stakeholders, senior built environment professionals from across the private and public spheres and prominent academic theorists. The findings of these sessions identified a consensus view on a vision for the 2040 City, highlighting key opportunities and barriers for planning and investment policies, and crucial directions for the strategic design and development of UK cities from the ground up.

Key Themes

Clearly the topic of the future 2040 City is very broad. It nestles within a well-documented and much contested subject area of future gazing. To ensure therefore that our recommendations offer new insight and are specific, the report focuses on four key topics, through which current and future socio-economic and environmental conditions are explored. As such, the online debate sessions were organised around four themes:

A. Equity and exchange

This theme reflects on the spatial and complex economic requirements for commerce to support specialized differences that future cities will need to accommodate. In particular, it considers opportunities for growth and greater equity through understanding the disparity between short-term commercial opportunities and potential longer-term uses and the viability of both.

B. Public and private land: Access and use

Taking a different view on spaces of exchange and inclusive access in cities, this theme asks: how should the funding and governance of urban public spaces evolve to ensure the survival of their character, openness and crucial civic functions?

C. Clustering and proximity

This topic considers the likely direction for urban density and the distribution of amenity in City 2040 as population growth continues. Will UK cities continue to follow a centralised 'wheel and spoke' model of development, or will the rise of the digital economy, accelerated by the Covid-19 pandemic, usher in a renaissance for local growth?

D. The impact of clean air

It seems inevitable that the impact on the planet's ecology of people living and working in cities will only intensify. This final topic therefore explores whether cities can reverse urban climate change impacts by abandoning silo-thinking in favour of a joined-up approach to sustainable design.

A vision for City 2040

The outcome of the online debates informed a collective vision for City 2040, summarised below:

The future city will become a balanced multi-hub system:

- The prime proposal to have emerged from the consultative work is for individual UK cities to be transformed into a network of multiple local hubs, with a more even spread of population density, commerce, social and cultural facilities, and infrastructure provision than exists in the current centralised pattern.
- This proposition does not herald the end of the 'centre' or of central business districts (CBDs), but rather envisages an intensification of local centres, each with their own characteristics and strong identities. CBDs will therefore transform and intensify as meeting hubs, with the capacity for bringing together project-based creative industries supported by reduced but more concentrated entertainment and hospitality functions.

The future city will be hybrid and uncertain – so it should be flexible and complex:

- Cities will increasingly represent a mix of both digital and physical commercial realms.
- Civic infrastructure that better supports the mobile work economy should be an important feature of the future city.
- There are opportunities for growth and greater equity through optimising the relationship between short-term commercial opportunities and long-term residential uses – i.e. creating a sustainable mix of 'meanwhile' and 'permanent' uses.

The future city should embrace health-driven and inclusive planning of urban space by:

- Strengthening civic rights through improvements to the accessibility and quality of the public realm as the primary shared space of equal encounter.
- Re-investing in the design and stewardship of urban green space as an essential public health good.

The future city should harness the opportunity of clean air and reverse urban climate change impacts by:

- Abandoning silo-thinking in favour of agile modes of collaboration in design and problem-solving.
- Freeing up to 10% of total urban areas as extra amenity space.
- Doubling urban greening and materially reducing road space, including halving on-street parking.
- Adopting circular economy principles in design and construction.
- Facilitating meaningful civic engagement in support of change.

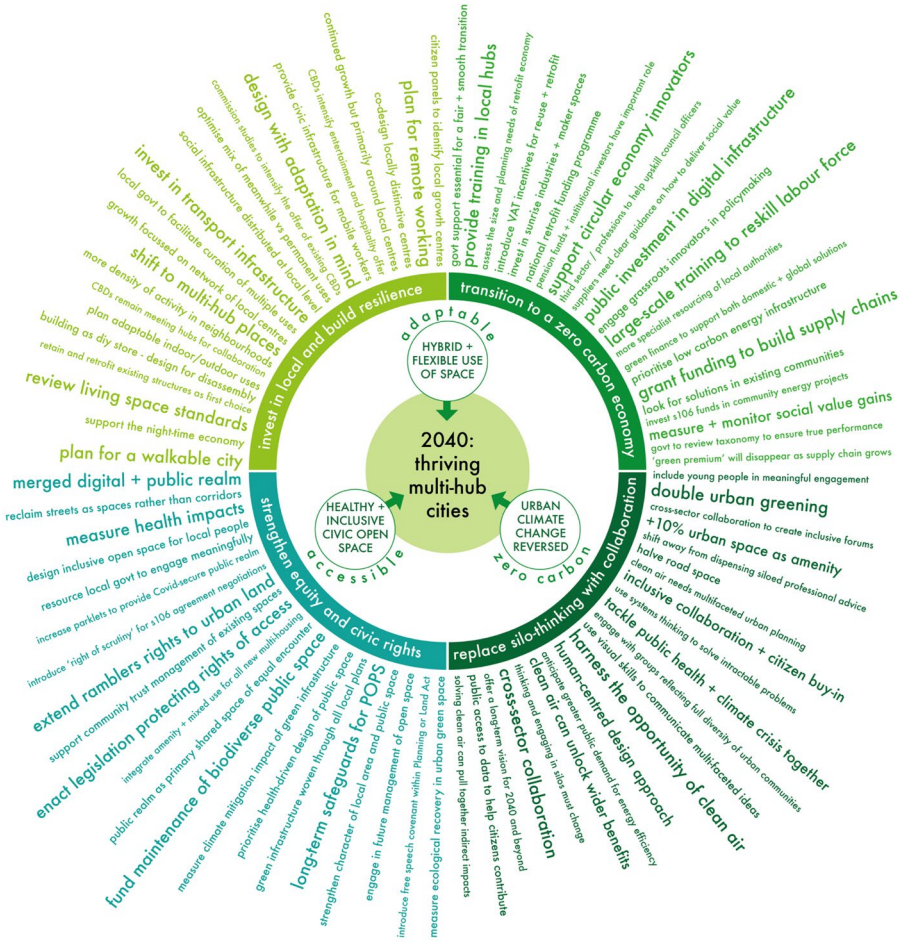

Fig.A

Vision for the 2040 city: diagram summarising the findings of the report and debate series. Illustration by Helen Evans on behalf of the Edge[2]

Recommendations

The reformulated city represents a major opportunity for development, as change usually does, and is also a significant challenge to planning policy, which needs to balance conflicting uses while maintaining green spaces, civic infrastructure and the dynamic potential for creativity. The city, as a living, breathing entity, needs to be allowed to develop in rich and multi-faceted ways.

The potential for growth is therefore great, but this needs to be assessed against metrics that reach beyond simple and short-term financial returns. Longer term investment strategies must assess value against a host of new performance criteria, each more readily understood in the context of curated space and long-term relationships.

There is a substantial willingness from the major players in the property sector; investors, developers, planners and designers to re-imagine and re-invigorate the UK's cities by 2040 and the model proposed within this report has been warmly welcomed. We also heard that funding is available given the right conditions, but at present the policies and national leadership are not yet delivering on the creation of successful mixed-economy communities.

As originally envisaged by Taylor Wessing LLP, the Edge and University College of Estate Management (UCEM) this study is the first part of the City 2040 project, intended to examine the application of, and outcomes from, existing urban planning policy and investment strategies, before making specific recommendations aimed at delivering successful and thriving future UK cities.

Looking ahead

There is little doubt that cities face an unprecedented and intense set of economic, social and environmental challenges and that urgent action is now required to prevent potential social unrest and future public health crises in the wake of the post-pandemic recovery and a likely climate breakdown. Yet the findings of this report also suggest that, with the right policies and resourcing, cities are uniquely placed to harness their human and environmental potential, guiding urban growth towards greater social, economic and environmental equity.

In terms of investment strategy, I believe that the impacts of Covid on re-thinking the built environment are much more significant than the impact of Brexit... The acceleration of obsolescence in the retail sector means that what would have taken 10 years has now happened in 12 months. If the right blend of uses to replace retail is curated, then collectively there is new potential for greater symmetry and mixed-uses where previously this would not have been possible.

Mark Allan, CEO, LandSec

Introduction

This report sets out an exploratory industry-led research initiative about how future UK cities could (and should) manifest by 2040, through an evidence-based study of the big issues that are currently transforming urban environments.

The work examines the physical and social attributes of cities in relation to and as made manifest by climate vulnerability, growth, health, resource efficiency, technology, investment priorities, governance and rights to land. It also identifies key developments in future thinking and practice amongst local and national policymakers, built environment professionals, institutions and businesses, addressing the new and changing infrastructure of cities and its impact on the lifestyle, housing and wellbeing of citizens.

In particular, this report aims to identify a consensus view on the key opportunities and barriers for planning and investment policy and the strategic design and development of UK cities, and recommends a series of problem-solving approaches to support well-integrated city making with lasting benefits.

Exclusions and definitions

Future cities and their terminology are still emerging, and this topic has not yet generated a consistent global vocabulary. Commonly used terms such as 'sustainable cities', 'liveable cities', 'regenerative cities' and 'smart cities' tend to have an ambiguous meaning and the interdisciplinary nature of city-making also makes clarity of concepts harder to achieve.

This report borrows the definition of 'future cities' as described in the 2014 Government Office for Science, Future Cities Foresight Project report, entitled: "What are Future Cities? Origins, Meanings and Uses."[3]

[Reflecting] on two inter-related ideas: the 'future of cities' and 'future cities':

- *The future of cities is a means to describe a series of enquiries, reviews and investigations into the likely requirements of cities in the future, the roles they will play, the pressures and threats they will address, and the trends that will help cities adjust and succeed.*
- *Future cities is a term used to imagine what cities themselves will be like, how they will operate, what systems will orchestrate them and how they will relate to their stakeholders (citizens, governments, businesses, investors, and others)."*[4]

Government Office for Science

Why 2040? Planning policies take a long-term view and typically set out a framework for future development on a 15-year horizon. They usually take 2–5 years to develop, consult on and adopt. Moreover, policy decisions made in the next 10–20 year period will be critical to addressing the climate crisis and ensuring a green recovery from the Covid-19 crisis.

This report is intended to assist decision-making in a UK context, therefore references to 'future cities' means those in the UK, unless otherwise stated. The authors acknowledge that current legislative and planning frameworks vary across the devolved nations. Even when limiting the conversation to one nation however, cities are of course highly varied in both physical and non-physical attributes. The report therefore attempts to differentiate recommendations across geographic areas, to facilitate meaningful conversations around strategic planning and governance for UK cities beyond a London-centric view.

Cities encompass a vast range of social, economic and environmental entities, whose future vision and priorities will inevitably differ. Some cities have an urban fabric and culture that dates back many centuries, while others were created from scratch in the last 50 years. With such diversity in the character and systems of cities it is almost impossible to resolve all conditions and specific needs with a 'one size fits all'[5] approach. It is not within the scope of this report therefore to comprehensively detail all aspects of the 'future city'. Rather, the work aims to draw on and expand a series of new and emerging ideas in this much debated subject area, and, for the first time, place these in a critical commercial context.

Challenges for the future of cities, their importance and relevance

Rapid urbanisation

With 55% of the world population already living in urban areas, the UN currently predicts that this will rise to 68% by 2050[6]. This unprecedented rate of urban growth could see the world's largest city reach a population of over 35 million inhabitants[7]. In the UK, 90.2% of the population is projected to live in urban areas by 2050.[8]

"The most impressive feature of UK population growth in the last three decades has been the resurgence of cities and especially of big cities"[9]. The 64 largest cities in the UK make up just 9% of the landmass, but account for 54% of the population, 58% of jobs and 60% of the UK's GVA[10]. By 2043, the total population in the UK is predicted to increase by a further 6 million, with the majority of this occurring in cities[11]. At the same time, there is growing recognition that traditional measures of success, such as GVA or GDP (Gross Domestic Product) no longer work as they are too narrow in their focus to reflect the prosperity of citizens[i].

Trends in rapid urbanisation have been at the forefront of concerns for global and national city makers for the past decade and remain at the heart of debate on what good growth should look like and how to meet urban housing and commercial needs.

The geographic pattern of population growth in fact reflects an urban recovery after a long period of relative decline. Most larger UK cities were in decline in the 1980s as a strong 'counter-urbanization' pattern in internal UK migration took hold; many experts hypothesised the loss of economic rationale for cities[12]. Since the turn of this century, this trend has reversed however, with London growing particularly rapidly. Recovery from decline has been less pronounced and more variable in other major UK cities, however in almost all cases population growth has been stronger in the 2000s than in the 1990s.

[i]For example, PWC and Demos think tank have created a 'Good Growth Index' based on the public's view of what economic success means to them, which captures a broad range of criteria, including healthcare, employment, housing, income, the environment, time with family and transport (PWC's 'Good Growth for Cities' report can be accessed online: https://www.pwc.co.uk/government-public-sector/good-growth/assets/pdf/good-growth-for-cities-jan-2021.pdf).

Although there is still a counter-urbanization pattern, this has been offset by increased urbanization, with London leading the way[13].

Historic trends in urban population growth were partly driven by infrastructure – the rise of the car in the post-war period made it easier for people to move out of cities by lowering transport costs. In 1961, only 31% of households in England had access to a private car/van, but by 1991 this had risen to 68%[14]. Urban growth was also influenced by changes in economic structure with a decline of manufacturing forcing jobs and people out of large cities. Policy was another important driver, with new towns built and slums cleared to encourage people to move out of cities.

Since the 1990s, the benefits of firms in knowledge-based services being able to cluster together in close proximity made city centres attractive places again, leading to an agglomeration effect and a revival in many cities' fortunes. Cities became more attractive places to live, as more highly-skilled workers moved in and areas from the industrial past were regenerated, student populations increased, and cultural and leisure amenities grew. Between 2001 and 2011, city centres expanded particularly quickly, with an average population growth of 37%. This compares to an average of 8% and 6% population growth for the suburbs and hinterlands over the same period[14].

Based on a 2016 review of Office for National Statistics (ONS) population growth data, the National Infrastructure Commission projected that, despite uncertainty over the impact of Brexit on migration and policy, London would take 30% of the population growth predicted across all UK cities by 2039 – representing a further 16% increase on 2014 growth statistics. Elsewhere in the UK, growth was projected to continue across cities, towns and rural areas, albeit roughly in line with 2016 population shares[14].

Climate crisis

> *Estimates suggest that cities are responsible for 75% of global CO_2 emissions, with transport and buildings being among the largest contributors…It is essential, therefore, to make cities an integral part of the solution to fighting climate change.*[15]
>
> **UN Environment Programme**

In November 2021, the UK will host the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow[16]. At the summit, delegates including heads of state, climate experts and negotiators will come together to accelerate implementation of the goals of the Paris Agreement and agree coordinated action to tackle climate change. This will be an opportunity for the UK to showcase climate action leadership on the global stage.

Despite the UK's ambition to be a leader in climate action internationally, the climate and biodiversity emergency has not been at the forefront of UK urban planning policy thus far, although there are signs that this is beginning to change. In 2019, amidst growing public support to urgently address global warming, the UK Government declared a 'Climate Emergency' and committed the UK by law to reducing greenhouse gas emissions to net zero by 2050[17]. This proved to be a pivotal moment, shifting planning policies at national and local levels to embrace Climate Action as a core policy. As of April 2021, 86% of the UK population lives in areas where local authorities have declared a Climate Emergency – over 500 councils in total[18]. Several have adopted earlier target dates than 2050 (such as Hackney Council in London, which has pledged to become a net-zero borough by 2040[19]).

There is still a long way to go in terms of effective implementation of these ambitious environmental targets, however. The science and understanding of how to create net-zero cities has existed for some time but upskilling the supply chain and making policies that are practical and which enable effective implementation are among the many significant challenges ahead.

Today, cities produce the lion's share of the UK's CO2 emissions while sections of their inhabitants, particularly in impoverished areas, comprise some of the most vulnerable groups to the adverse impacts of climate change. Understanding the key trends in urbanisation likely to unfold over the coming years is crucial to the successful implementation of climate-related targets, as well as ensuring that our cities remain inhabitable and appealing.

> *Cities don't follow the national economy, they are the national economy. If the economy is to prosper, then the UK's largest cities and towns must be at the heart of economic policy-making.*[20]
>
> **Centre for Cities**

Shifting demographics and the 'Levelling Up' agenda

The underperformance of cities is at the heart of the UK North-South divide, and the UK is by some measure[21], one of the most unequal developed economies in the world.

Alongside trends in urban growth, there has been a major population shift from the North to the South of England which has contributed to disparity. From 1971–2011, the five regions of the South grew by almost 6 million and accounted for 81% of the total growth in this period[22]. Although migration from north to south has now slowed (possibly due to the rising cost of housing in the South), population growth in the South continues to outpace the North, largely due to higher rates of both internal and international migration as well as natural change (births minus deaths).

Additionally, cities have been ageing at different speeds over the last decade, with a growing divide in demographics between the regions. Despite an overall ageing UK population, seven cities (including Brighton, Crawley, Coventry and Dundee) have surprisingly seen a decline in the share of people aged over 65, driven by large increases in younger age groups.

In the other 56 cities[ii] across the UK however, the share of people aged 65+ has risen, with Wigan at the top of the list, increasing from 15% to 18.8%. In many cities the rise in the share of those aged over 65 is not only the result of an increase in the number of older people, but also a fall in the population aged 16–49. This may reflect an underlying weakness in economies as younger generations move elsewhere for job opportunities. For those cities which are ageing, it is vital that social care policy reform takes account of demographic disparities between our cities.

While the South-East is home to some of the most prosperous cities in the world, many in the North and Midlands lag far behind. In light of this, the Government has set out to 'level up' underperforming areas of the country. In order to develop policies that allow all future cities to flourish, policymakers must also recognise the varying economic and demographic contexts between regions and within cities themselves.

It would be inaccurate to suggest that the overall economic 'success' of a city is reflected in the prosperity of all of

[ii] This figure is drawn from the Centre for Cities' research on the UK's 63 largest cities and towns. A detailed definition is available online at: https://www.centreforcities.org/city-by-city/.

its citizens. This is particularly the case for larger cities such as London. Even before the Covid-19 crisis, London had the highest poverty rates in the UK, with 28% of the population living in poverty compared to 22% in the UK generally[23]. Since the Industrial Revolution, urbanization has brought with it urban poverty – often characterised in inner cities by high density living conditions, crowded areas with high levels of competition for work and considerable commodification of land, infrastructure and basic services. Survival options may be more constrained in the inner city than in other neighbourhoods, exacerbated by higher costs of urban living. For example, opportunities for urban agriculture are clearly more limited. Poverty rates in inner London are on average 10 percent points higher than in many parts of the North of England[23].

Another major theme of city population change is the rapidly increasing ethnic diversity of UK cities. The latest information from the ONS shows that in every region of England and Wales, people from White ethnic groups were least likely to live in an urban location compared with other ethnic groups, while people from Pakistani (99.1%), Bangladeshi (98.7%) and Black African (98.2%) backgrounds were most likely to live in an urban location. Eight out of the UK's ten most ethnically diverse Local Authorities are in London[24].

Ethnic mix contributes to the cultural diversity of UK cities and provides many social and economic benefits, including helping to widen the variety of leisure, creative industries and other cultural facilities on offer – and this is in turn a significant factor in attracting people to live and work in cities. For example, the 2011 Census[25] found that Manchester's city centre residents identified the offer of leisure, cultural facilities and restaurants as the number one reason for choosing to live in this location, with proximity to work being the second most popular reason. The population is overall very young and highly qualified – a demographic also highly influenced by Manchester's two universities and the availability of jobs for young professionals[26].

While, overall, cities in the UK have become less ethnically homogeneous, this does not always translate into greater diversity at neighbourhood level. Leicester, Bradford, Oldham and Blackburn, among others, have seen a sharp rise in neighbourhoods where fewer than 15% of the population was White, meaning that the number of minority neighbourhoods segregated from the largest ethnic group in the population has increased[27]. Successive governments attempted to increase social integration to avoid isolation between ethnic groups; in 2018, the Government

identified poor employment opportunities as one of the key consequences of this[28].

Isolation and urban social disparity are of course complex issues that transcend ethnicity and geography. The relationship between geographic division, deprivation, social mobility, ethnicity and life expectancy is challenging and needs to be better understood to support equal prosperity in City 2040.

In Lord Sainsbury's 2021 report for the Centre for Cities, a lack of regional level government is cited as a key factor in previously unsuccessful attempts at re-balancing economic development in the UK. The report also identifies economic underperformance of the UK's cities as the 'single biggest barrier to levelling up', with Mayoral Combined Authorities (MCAs) offering a potential solution.[29]

Lessons must be learned through critical observation of today's 'failing' and 'successful' cities in order to promote equity and protect against social unrest – work which the National Commission on Infrastructure, together with many others, is progressing. While it is beyond the scope of this report to carry out comprehensive case studies of the UK's major cities, its recommendations will be framed within the context of diverse regional challenges.

Emerging policy context

Changes to UK planning policy

The Government is currently reviewing wholesale reform to the English planning system in order to 'streamline and modernise the planning process[30]' and make more land available for development. This will include digitising the planning service and introducing new design codes and zoning strategies, introducing radical change.

The 'Planning for the future' consultation ran from August to October 2020 and received over 40,000[31] responses. If adopted, the White Paper proposals will transform cities and while some aspects of the proposals are welcome to improve clarity and public engagement, several industry groups and planners have raised concerns that high levels of deregulation will lead to an overall reduction in the quality of the built environment. The Ministry of Housing, Communities and Local Government (MHCLG) held a workshop with the Edge in October 2020 and while a full summary of the Edge's response to the consultation is available online[32], a key recommendation is that the climate and ecological emergency needs to be the overriding focus of any proposals to

overhaul the system and the Government must demonstrate how proposed changes will strengthen this capacity.

Against this backdrop of reform, the Government has already announced changes to permitted development rights. Legislation introduced meant that from October 2020, many of the commercial use classes set out in The Town and Country Planning (Use Classes) Order 1987 were amalgamated into one new Class E, so that property owners need not now apply for permission to change between a broader number of uses (from retail to restaurant, for example, or to gymnasium or office or creche). A claim for judicial review brought by Rights: Community: Action[iii] group has yet to reach the Court of Appeal however, the Government has confirmed that this new Commercial, Business and Service use class will be expanded to include residential use from August 2021 – therefore allowing the conversion of a wide range of commercial properties to residential without the need for planning permission. As this report will explain, there is an urgent necessity for flexibility in the space and place of City 2040, and given the challenges already faced in our high streets (and the imperative of creating genuinely fit-for-purpose housing), these legal changes can be regarded as a threat to the vibrancy, diversity and equity of our already struggling urban centres.[33]

Covid-19 acceleration

Cities account for around 60%[34] of the UK's economic output and the economic and social impact of Covid-19 has been severe. Once the immediate crisis is over, the Government will urgently need to help cities rebuild their economies. In terms of urban planning, the crisis has accelerated some patterns which already existed prior to 2020 – such as the rise of digitisation and remote working.

Clearly the full extent of the impact of the Covid-19 pandemic remains unknown and this introduces further uncertainty for predictions on population growth, migration and policy. However, what we do know is that historically major events like this tend to bring big changes in the way that things are done. The pandemic may be expected to leave some long-term legacies such as greater flexibility in planning use classes to allow businesses to pivot more easily, increased opportunities to work from home and more rigorous 'hand, face, space' standards in public infrastructure settings that have to account for genuine (and growing) capacity.

[iii] https://rightscommunityaction.co.uk/ – see also: R (Rights: Community: Action) v Secretary of State for Housing, Communities And Local Government [2020] EWHC 3073

Recent and emerging research

The future of the city is a fertile topic, long debated by city authorities and planners, civic societies, business organisations, pressure groups, service providers, academia and many others. A large body of recent and emerging research considers the future of cities from diverse angles. The list below is not exhaustive, but it provides a snapshot of some notable innovators in the field, several of which are referenced within this report:

- Think-tanks and thought-leaders: the Centre for Liveable Cities in Singapore, Stockholm Environment Institute, McKinsey Global Institute, GaWC, The Climate Group, Mori Memorial Foundation, African Centre for Cities, Michael Bloomberg and Bloomberg Associates, Centre for Cities, World Future Council and Connected Places Catapult.
- Inter-governmental organisations and their specialist departments: UN-Habitat, EU regional policy, World Bank and WBI, Cities Alliance and OECD Territorial Development.
- Academic urban laboratories: University College London Urban Lab, MIT Senseable City Lab, Harvard Graduate School of Design and Center for the Environment, LSE Cities, Brookings Institution, Chinese Academy of Sciences, Columbia University and NYU.
- Technology developers and vendors: Arup, Siemens, Cisco and IBM.
- City networks: C40, UCLG, EuroCities, CityNet, ICLEI.[35]

Understanding established themes within this extensive body of work, in the context of the emerging impacts of the Covid-19 crisis and the urgent need to respond to the Climate Emergency, was a key driver of the City 2040 project, and this report turns now to place the development of the future city, and its capacity to overcome the challenges set out above, in the context of four key themes.

Key Themes

> ...as [cities] constantly have to restructure, we can no longer contemplate the carbon costs of this that we did 15–20 years ago. We need to build greater adaptability into urban strategies to allow the city to respond to rapid changes. This is likely to accelerate in the future, rather than decelerate.

Prof Peter Bishop, UCL

> General access to workplace facilities will be increasingly needed as more people find themselves in gig-economy style jobs. We need access to mess rooms, electricity, dry spaces, etc. Even if these things are provided outdoors, they are desperately needed.

Max Dewhurst, Activist and Courier

A. Equity and exchange

How will sharing and exchange evolve in the 2040 city?

Context

In a liquid modern life there are no permanent bonds, and any that we take up for a time must be tied loosely so that they can be untied again, as quickly and as effortlessly as possible, when circumstances change – as they surely will in our liquid modern society, over and over again.[36]

Zygmunt Bauman

We live in a time of rapid change where commerce and technology are concerned; where nothing appears to stay the same for long enough for us to plan for the long term. We also live at a time when society, and city living in particular, appears to be ever more polarised between the haves and have-nots. There is serious positive potential in change, but the current system of exchange often appears to work to the absolute advantage of the haves and the potential detriment of the rest. Equity has become a casualty of city growth and change – but this isn't inevitable, as fates go it is eminently avoidable – and effective planning, however difficult it is to see ahead, is key to achieving city environments that work for all. Change can be seen as threatening, but it also represents our only opportunity, one that professionals working in the built environment urgently need to grasp.

In November 2020, for the first session, A, of the City 2040 series – 'Equity and Exchange', five invited guest speakers, an expert Chair (see Collbaborators) and an audience of over 90 identified and debated the importance and impact of these closely interrelated topics for the future of cities in the UK.

The discussion was positive and at times upbeat about the future of the city, but it was also realistic about the current state of UK cities. The word 'broken' was used frequently to describe many of the ways our cities are functioning, and change was welcomed and embraced.

Speakers also recognised that the devastating impact of the global Covid-19 pandemic, along with the sweeping nature of many measures taken to tackle it, have brought into sharp focus issues that have been bubbling under the surface for many years. The pandemic has forced us to undertake a much greater examination and re-evaluation of how we envisage, plan and use our cities than we might have done before 2020. Above all, it has amplified and clarified the need to work together to achieve positive change.

Covid-19 also managed something that the potentially greater and longer-term threat of climate and ecological breakdown has significantly failed to do. Despite many calls for action on de-carbonising our cities for their long-term sustainability, the instinct of many has been until now to continue with business as usual. No city plans are in place that comprehensively either mitigate or provide resilient responses to global warming or deal with the host of other related environmental issues – although perhaps one is on the way for Amsterdam.

Polarisation in our cities can be illustrated in multiple ways and is clearly pervasive, but the following snapshots drawn from the debate are indicative:

- 20% of all workers in London are in precarious self-employment, mainly within the 'gig' or 'mobile' economy, a figure that rises to 25% for 16–34-year olds and is highly prevalent among workers from BAME communities. They work long hours but remain isolated and lack even the most basic of facilities provided by either their employers or the state.

- In an ever-changing environment, 'learn until you are 21 and then work for 50 years' is no longer a sustainable model. Life-long learning is essential but is only available to those with the financial security to continuously invest in their future. Rapid and perpetual change means that success, or failure, is closely related to the ability to shift from one place to another, from one form of work to another and from one part of society to another.
- The 'centre' and the power of 'agglomeration economics' have overcome the 'local'. Everything of economic value is crammed together in small central business districts (CBDs) to generate ideas, innovation and cash flow. Capital has become concentrated, heavily benefiting those with the opportunity to participate but leaving other areas, traders and workers struggling to survive.

Several major global cities are beginning to tackle the growth of inequity in their separate jurisdictions. The recently re-elected Mayor of Paris, Anne Hidalgo, is championing the notion of the '15-minute city' – an ecological transformation that has the aim of removing 70% of Paris on-street car parking spaces and ensuring that everything you need in Paris is available within a 15 minute bike ride – 'chrono-urbanism'.

Amsterdam launched its 'City Doughnut[37]' policy in April 2020 – transformative action for the City within the circular economy, developed from Kate Raworth's Doughnut Economics. The policy sees the city as part of a broader economic, social and environmental system that is expected to have a positive impact well beyond the immediate boundaries of the city.

These represent very different approaches to similar problems, with Paris centrally directing policy in classic dirigiste fashion and Amsterdam proposing 'transformative action' through community engagement, though both aim to achieve results that are more equitable, sustainable and inclusive.

In the UK, responses are still only occurring on a project-by-project basis, and many big investors remain London-centric, hampered in regional commitments by liquidity and scale. At British Land's Canada Water development for example, engagement with local residents, especially the young and more demographically diverse, and the site's rich history, is providing opportunities for commercial developers to be proactive in creating places that aim to be equitable – rather than leaving it to chance or market forces. Working with existing local organisations, such as Affordable Workspaces, this campus development

provides spaces for local start-ups and the community at an early stage of the project, on the basis that there is significant value to be derived through committing to long-term involvement in the future of the wider area.

Commercial landlords, faced with increasing vacancies in properties usually aimed at corporate retail tenants, are taking another tack and adapting their offer to local circumstances and 'character'. Engaged landlords have long considered tenant mix as key to commercially successful retail space, for example, but by 'curating' their properties and reducing lease periods, shorter, more flexible tenures make it possible to take a more active role and make more deliberate choices. By default, and by dint of circumstances, access to commercial space on high streets is becoming more fair, equitable and local, even while they struggle to survive.

For similar reasons 'meanwhile uses' are increasingly occupying high streets and other yet-to-be-developed sites. Originally intended to keep a site in use and ticking over until something more substantial came along, the 'meanwhile use' of a space has provided opportunities for urban experimentation; short-term trials by independent traders and local communities to see what works and create their own (and owned) vision of equitable urban change.

As well as driving short term rental streams, reducing unused space, often a blight on an area or location, creates opportunities to engage in new localised forms of city making. Temporary meanwhile spaces enable non-professionals to engage in city making and potentially take more risk than is normally possible – if it is successful it can stay, if not it must either change again or be swept away. Success begins to define itself.

Responses to the major challenges facing cities are possible even in the face of weak economic conditions and potentially intractable issues such as the climate crisis, housing shortage and the loss of stable employment. Cities are resilient by their very nature and have faced and emerged successfully from similar challenges before, but by 2040 it looks likely that cities will be different in several significant ways.

Looking ahead

Civil society

A positive view of City 2040 is based on the idea that the rediscovery of the local, with a re-emphasis on community aid groups and mutual support, will bed-in and become permanent. The, perhaps optimistic, expectation is that lessons have been learnt during the Covid-19 pandemic and in consequence civil society will change irrevocably. Such lessons include the recognition that:

1. the parts of society that provide value, can be relied on and are worth getting actively involved with are those that are personal, local and accessible; and
2. it has proved unnecessary to travel beyond a relatively small radius from home to access most of the facilities that are required to support a reasonable quality of life. If further travel is required, then it remains available but is no longer required on a daily basis. This is also of course the principle behind the 15-minute city, a programme for city mending and urban improvement that long predates pandemic concerns.

It is not expected that society will change its attitudes radically and overnight but a shift is anticipated that will eventually result in a higher political priority being placed on encouraging citizens to show more care for others, especially the vulnerable, with greater value placed on the contribution of key workers including social care and, possibly, vital contributors such as delivery drivers, an increase in sharing resources and knowledge at the local level and more emotional investment in the surrounding community. Conceivably, this might result in a people-centred approach to local economic development and public goods, better built environment provision of facilities for essential workers such as delivery drivers, and more confidence in paying for local services that do not show an immediate financial return on investment. The Community Wealth Building[iv] model that asserts that by addressing issues of disparity and wealth we can get over the problem of maintenance of community assets was cited positively at 'Session A: Equity and Exchange'.

[iv] Community Wealth Building is an inclusive, people-centred approach to economic development which uses purchasing powers to redirect wealth back into local communities. This approach is being pioneered by several Local Authorities across the UK, including the London Borough of Newham. For further information, see the Centre for Local Economic Strategies (CLES): https://cles.org.uk/about/cles/.

The idea of any one building having one single economic use is outdated; and as a result, the continued use of static investment classes problematic. In a commercial sense, this does mean that building assets are effectively increasingly operational, and their success and valuation depend on what their clients, their occupiers, want. For most of the 20th century, long full repairing and insuring (FRI) leases turned properties into a proxy for fixed income, but technology and now Covid-19 have done serious damage to this idea; it's no longer simply about yields. There is a global search for net effective incomes rather than notional capital value and to a large extent the economics we get will result from the decisions we make now. Capital investors are pricing risk differently, and while there may be some pain in the short term, the future is a sea-change that supports and echoes the push to flexibility identified in this report.

Businesses, including those in the retail sector, that are currently heavily invested in traditional economic models based on short-term capital value will need assistance from government to transition to the longer-term 'doughnut'[v] approach to measuring and generating value, which seeks to ensure adequate provision of services and goods while not damaging the ability of the environment to function as required for the long term. The Government's Green Finance strategy which focuses on 'aligning private sector financial flows with clean, sustainable and resilient growth[38]' should be harnessed as a key policy driver to precipitate this change.

Digital living/networking

As communities turn to live and work locally, they will also continue to become ever more reliant on and committed to digital living, a trend that the pandemic has only accelerated. Superficially these two trends appear to be at odds, yet they respectively pull and push society towards the same result – decentralisation. There are opportunities in the digital realm of course; to monetise digital space and to build forums for online networking, but this carries the inherent danger that inequality becomes ever more geographically driven, dependent for example on broadband

[v] Doughnut economics is a visual framework for sustainable development which reframes economic problems within planetary environmental and social limitations. The name is derived from the shape of the diagram – a disc with a central hole. The centre hole depicts humanity's essential needs (healthcare, education, equity, etc.) while the outer crust represents the environmental ceilings (planetary limits) which life on earth depends on. This economic theory was developed by University of Oxford economist Kate Raworth in her 2012 Oxfam paper '*A Safe and Just Space for Humanity*' and elaborated upon in her 2017 book 'Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist'.

speeds, and that sectors, such as the knowledge economy, one of the UK's relatively rare success stories in recent years and highly dependent on bringing the right people together in a single space, will suffer.

In response, new networks will form to counter the relative solitude of a life lived predominantly online and enough of these will be physical and based around real places, for example; the start-up network, First Tuesday[vi] or the running organisation Parkrun, to change the way spaces are used. They will create demand for temporary and time limited spaces and for the management of places around a 24hr continuously changing cycle of space-use. We heard how some innovative landlords see this as an important part of their newfound responsibility to 'place' as well as a potential and essential income stream.

On the work front, new 'collaborative communities' require space to come together to work, rest and play. Such ventures will need planning support and investment to help them thrive. In April 2020, over 60% of people working in professional occupations in the UK were working online from home[39]. Although it is anticipated that many workers will return to offices once the Covid-19 crisis has subsided, it is likely that a high proportion of the services sector will transition to a hybrid remote working model. Businesses may downsize their offices accordingly to save on overheads, although they will still need collaborative space. Even if this happens, smaller businesses in need of space may take up residence in parts of CBDs vacated by relocating services sector firms. This could destabilise commercial rents in the short term, however longer-term value remains in offering flexible collaborative space that enables a workforce to access what they can't get in the home office; for example, water cooler culture and technology. Employees will demand more and better quality space, and the value in poorer quality stock will drop.

Much uncertainty remains around these projections given that we are still experiencing the Covid-19 pandemic at the time of writing this report. Whatever the future holds for city real estate as the UK recovers from Covid-19, the cycle

[vi] First Tuesday was a networking forum that was in its heyday from 1998 to 2000 but collapsed as a formal organisation after the dot-com crash. It survives as multiple groups, mainly in the tech/start up sector, who meet across the world and on-line on the first Tuesday of the month to network etc. Vickers A (2000) *First Tuesday: A networking success story*, the Guardian 31 August 2000 [online]. Available at: https://www.theguardian.com/media/2000/aug/31/4 [accessed 5 May 2021].

of respectability, decline, creative re-use and gentrification will continue, as it always has in cities.

Green agenda

All cities will need to move towards Zero Carbon emissions; buildings will be adapted to benefit from natural ventilation, good insulation and effective daylighting. Mass transit will become the predominant means of getting around alongside walking and cycling and buildings will be re-used rather than demolished and replaced, but, possibly, the most significant impact on planning will come from the personal and corporate carbon credits that individuals and businesses will carry with them, allowing places to operate at all and potentially to thrive.

Just as schools and universities have had to adapt to a per capita income so cities will learn to adjust to a per capita carbon allowance, making it essential that they attract people to live and work in each district or decline accordingly. Currently per capita carbon allowances are more easily adopted by major cities – UK cities with weaker economies and greater social care needs will need tailored funding support and policy solutions from government to facilitate an equitable application of per capita carbon allowances across the nation.

On the expenditure side, cities will learn to watch every kilogram of carbon emitted and be forced to calculate whether, for example, the gig economy is better for carbon budgets than a directly employed workforce. Policy makers will be given a new lever with which to adjust the working of the economy and city districts will rise and fall accordingly.

Civic infrastructure

Speakers at our discussion in 'Session A' returned again and again to the need for a civic infrastructure in order to make this new city economy work, whether this was the reinvented high street, which it was noted everyone seemed to have designs on, or the innovative re-use of old buildings and redundant spaces.

This doesn't just happen. It requires resources, fiscal and otherwise, and a proactive approach from developers, employers and Local Authorities. This essential caveat means that the potential for providing the facilities for city success; the green spaces to make it relax and breathe, the mixed commercial spaces to provide work and the cycle lanes to connect it together is there, but it requires the investment and incentives to make it happen.

The learning city

The transition to new city forms is never going to be easy but with rapid change comes the need to constantly develop new skills and with this lifelong learning may become the key for unlocking the potential of new areas, re-using old buildings and reinvigorating tired places. Lifelong learning requires only a little bit of physical infrastructure but is capable of occupying former shop units or office buildings and bringing new life to them and their surroundings.

Education needs to be for a 100-year life in the city – from the cradle to the grave. The benefit is that at each stage it will contribute back – providing animation, energy, skills, creativity and technical ability.

Access to lifelong learning needs to be enabled by Local Authorities but may require a 'policy blast' from central government. The payback could be immense and could benefit business by upskilling workers to exploit new opportunities offered by an emerging green economy.

The hybrid city

The conclusion, one reached by many contributors, is that the future city cannot be one thing or another. We must stop thinking in separate boxes: it is all about hybrid environments.

Flexibility is key and business models will benefit to the extent that they can make the city work throughout the day, the week and the year. It is not enough just providing spaces, a hybrid approach has been shown to generate opportunities, produce meanwhile solutions from unpromising materials and create new letting arrangements with productive relationships between landlord and tenant.

Does this mean that cities themselves are about to enter the gig economy with all its potential downsides: ducking and weaving to survive, innovating to thrive? Perhaps, but we are all agile managers now, building networks, avoiding too much occupational specialisation, renting rather than buying and experimenting at building new pieces of the city.

Think simple we were told – not likely – hybrid complexity is the theme.

RECOMMENDATIONS

City 2040 will be hybrid and uncertain – therefore flexible and complex

It will increasingly be a mix of both digital and physical commercial realm.

It needs to grasp opportunities for growth and greater equity through understanding disparity between short-term commerce opportunities and long-term residential uses – i.e. Meanwhile vs. 'Permanence'.

RECOMMENDATIONS

Challenges and key questions

- Should cities follow Amsterdam and create an economic self-portrait that everyone can buy into?
- Equity and inclusion require significant public investment in digital infrastructure to enable disadvantaged groups and traders to access the digital public realm.
- Are there business opportunities for workshops/maker spaces which could help town centres/high streets while supporting sunrise industries and the transition to a green economy? What at the implications for rental yields?
- How can city planning respond to spatial requirements for 'circular economy' production at the neighbourhood level (e.g. shared resources, workshops)?
- How can cities identify the opportunities for 'incubator spaces' within former large-scale commercial buildings?

RECOMMENDATIONS

Next steps

Policy making

City 2040 will need to win global talent from competing cities across the world and be less afraid of change – treating cities as robust frameworks, capable of endless re-invention.

Understand government's key role in facilitating investment, including understanding how the private market can positively contribute to local plans and working with communities.

Create scope for exchange according to the time of the day, week and year.

Make use of the impact that social structures provide as 'functional participants' in the built environment (and central government should provide sufficient funding).

Strengthen the local and gain from the cultural spin-offs and measure and monitor resulting social value/community wealth building gains.

Assess the size and planning requirements of the retrofit/green economy including education/training requirements.

Ensure suppliers understand how to deliver and measure meaningful 'social value' local economy benefits.

Commission studies on how to intensify the offer of existing CBDs.

Improve infrastructure planning so that it can sustain health and wellbeing for 'mobile economy' workers.

Design and built environment professions

Experiment while we have the current abundant opportunity to do so.

Look for solutions from within existing communities.

Ensure from the outset that designers and planners include the infrastructure needs of mobile workers and engage with key stakeholders to identify these.

Design with flexibility and adaptation in mind, considering out-of-hours alternative uses, identifying symbiotic/complementary meanwhile opportunities for clients and planners to consider.

Landowners, investors and commissioning bodies

Identify from the outset opportunities for meanwhile use as part of feasibility site appraisals.

Explore opportunities to retain and retrofit existing structures as first choice, rather than starting from scratch with new build.

Engage with local grassroots circular economy makers at pre-demolition stages to explore opportunities for re-use of materials for existing structures that are scheduled for demolition.

Explore opportunities in the digital realm to connect people (tenants and licensees) to physical space.

Invest in civic infrastructure and commit to lifelong learning to better support the mobile economy and flexible workforces, rooting businesses within their local context and community.

Local communities

Grassroots innovators in circular economy practices should engage with neighbourhood forums to inform local policymaking (e.g. repair cafés, hackerspace resources, makerspace hubs).

Creative enterprise zones should actively seek to engage with and create economically viable conditions for these circular economy innovators.

The simple act of walking contributes to physical and mental health in so many different ways. Walking is free and has been proven to reduce the risk of heart disease, dementia, type 2 diabetes, depression and many other conditions. Ensuring access to green spaces for all is fundamental to wellbeing in cities.

Stephen Edwards, Director, Living Streets

> Protest is often considered a key ingredient of genuinely public space. In England, public spaces are not "public forums" (as they are in the United States) and legally, freedom of association and freedom of speech can only be exercised as of right on public land.

Greater London Authority, Draft Public London Charter 2020[40]

B. Public and private land: Access and use

As the provision of urban public space becomes increasingly diverse, how should the funding and governance of these spaces evolve to ensure the survival of their character, openness and crucial civic functions?

Context

The events of the last 12 months have emphasised the vital importance of public spaces of every kind to the physical and mental health and wellbeing of urban communities. Access to, and use of, urban green space, squares and streets has, for many, been the only release from lockdown, working from home, and home-schooling together with the other mental and physical stresses imposed by the pandemic.

In the context of the growing appreciation of, and debate about, the character, use, funding and management of urban space, the current vaccine rollout and gradual control of coronavirus present a critical opportunity to re-evaluate the provision and accessibility of these spaces now – as well as part of our vision for City 2040. The last 50 years have seen dramatic change in the provision and character of urban public space – and of public access to this critical amenity – under the influence of five major factors:

1. The ownership of, and control of access to, land within cities has changed dramatically. Since 1979, 10% of the land mass of the UK has passed from public to private hands; the largest passing of 'public' land to private interests since the first wave of enclosure acts (starting in the 16th century, these privatised between 15–20% of used land)[41]. By area, the largest part of this has been outside urban areas, in the sale of forests, farms, etc. but the sale of public open land within cities and the loss of hospital sites, local authority lands, even school playgrounds, has significantly diminished the formal and informal amenity that this open land represented to urban communities. It is perhaps as remarkable for the lack of outcry that this has occasioned as it is for the scale and speed with which change has come.
2. The increase in creation, adaptation or adoption of ostensibly 'public' spaces (POPS – Privately Owned Public Space) in cities, which private institutions secure via limitations on access and behaviour, e.g. More London (London Bridge City). These have been charted[42] and commentated on by observers and researchers such as Anna Minton and Professor Thomas Perroud.
3. The control of access and use of POPS is often managed through surveillance and use of tools like facial recognition – leading to public and regulatory questions about the apparently conflicting senses of privacy and exclusiveness of these private spaces[43] and the limitations on access and use implicit in their provision that have led to an, almost globally consistent, sterility of character.

4. Parks, commons and green spaces – the very spaces that have been so vital to the physical and mental health of cities during the Covid-19 pandemic – have suffered from a lack of investment and been reduced in diversity and quality over the last 10 years as cash-strapped Local Authorities have cut back and/or outsourced the maintenance and planting regimes of their parks.
5. At the same time, a three-pronged enclosure and quasi-privatisation of public parkland has reduced the area of, and access to, green spaces. The current character of this public parkland is dominated by signpost and denial and the pervasive air of maintenance cost reduction leading to, for example, a reduction of access, activity and/or amenity. Local Authorities have for example accepted sponsorship for commercial branded (Adidas gyms etc.) exercise areas, and large areas of Metropolitan Open Land have been fenced off for revenue-generating activities, such as rented sports pitches. Parks and commons are regularly (albeit temporarily) enclosed as venues for festivals[44]. Whilst generating income for the authorities, this too has curtailed open public access.

The use of technologies has also changed the character and the use of public space in cities. In terms of movement through the city, the use of map 'apps' and smartphones can be seen, on one hand, as an entirely benevolent provision of wayfinding and navigation aid. On the other hand, the tracking function of these represents an aspect of Surveillance Capitalismm[45], further diminishing the 'public' and anonymous nature of these spaces.

Many of the employment, social and transactional uses of city spaces have been assumed by the digital environment/internet. There has been a particular, marked acceleration of this change during the pandemic. Meeting via Teams/Zoom, social-media, and online arts performances and shopping have all acted as virtual equivalents of the work, life, cultural and leisure settings we were used to in the city. While it might be thought however that this transition to virtual space would reduce the ostensible value and need for physical public space, it is clear that the opposite has been true. The open and social nature of public space has been very highly prized.

Similarly, the streets – largely devoid of motor traffic but with a need to provide Covid-security and appropriately socially distanced routes for pedestrians and cyclists have been reclaimed under the Experimental Road Closure Orders as public spaces – places rather than transport corridors.

Critical questions

In this context:

- How can we ensure that urban public spaces – whether in public, private or trust ownership and management – deliver the amenities that are so necessary to the physical, mental and political wellbeing of the urban community?
- What are the implications for governance, funding and community involvement?
- What has 2020/2021 (the effects of lockdown and the pandemic and the death of Ella Kissi-Debrah[46]) taught us about the need to provide urban spaces of appropriate scale, immediacy, green-ness, and air-quality and how do these issues relate to other papers discussing City 2040? For example – what does the need to provide basic, safe air-quality teach us about the use of our streets and roads and the critical need for urban green space to mitigate the worst effects of those uses[vii]?
- What are the implications and responsibilities in creating a digital realm of technology-enabled public space that overlays the physical?

Current thinking

In the November online event 'Session B: Public and Private Land: Access and Use' attracted an audience of over 80 and, between the contributions from the Chair, the five invited speakers (see section Collaborators) and participation from the audience, identified the following points of view and broad concerns.

Current trends and initiatives

Contemporary thinking on urban design and settings for increasingly dense housing provision has revolved around several initiatives such as Living Streets (a charity for everyday walking) and '15-minute' and Walkable Cities. These argue not only for greater density, diversity and permeability for pedestrians, cyclists (all non-vehicular transport) in cities but for the character of streets – such as the Potato Row housing in Copenhagen or Marmalade Lane in Cambridge – to enable occupation (for play and social interaction) as well as movement.

In the development world, public and amenity space works best when it prepares for whole community access,

[vii] This question is further expanded in [D]: 'The impact of achieving clean air: and equipping City 2040 to reap the benefit of whole systems thinking'.

and is not segregated by occupation, generation or living status (such as those in affordable housing). As an investment strategy, this is not motherhood and apple pie; it is about building a legacy. Covid-19 highlighted many threads of community living that we long lamented as lost. People want to hold on to a sense of belonging to a place and so it makes commercial sense to create spaces in which people stay longer. Moving forward, capital may be expected to be increasingly focused on longer view urban regeneration and it is necessary to consider some of the more difficult conflicts between private landownership and the public.

The political point of urban space

One of the critical functions of urban public space is the accommodation and embodiment of a community's rights of free assembly and free speech. To this extent, the privatisation of public space – whether permanent or temporary, partial or wholly – represents a potential denial of democracy. This issue came to broader public attention with the routine eviction of the Occupy Movement demonstrations in 2011 (organised globally against all forms of inequality: economic, social, and spatial) from sites chosen for the nature of their private provision and management, and some countries responded in surprising ways. Governments in Germany and California, for example, are legislating to protect the right of free-speech and assembly in POPS[47].

The UK has fallen behind in its response to the increasingly private provision of public space and stands apart as a country that continues to give property rights primacy over competing liberties.

Currently, UK law does provide for access to certain areas of private space through the Countryside and Rights of Way Act 2000 which supports recreation, however there is far less support for political use. There have been several cases in the UK and European Court of Human Rights – including Appleby v The UK (6 May 2003)[48], where the rights of POPS owners, such as shopping mall owners, have won out against freedom of assembly and even freedom of movement. Unlike in Germany, freedom of access for political use/protest on privately owned public land is not enshrined in land law.

The latest iteration of the London Plan (published March 2021[49]) was widely expected to include regulation of the management of POPS. In reality however, it states only that: *"It is important to secure appropriate management and maintenance of open spaces to ensure that a wide range of benefits can be secured and any conflicts between uses are minimised."* The current draft 'Public

London Charter[xl40], due for publication in summer 2021, provides more detailed guidance, stating that: *"Public spaces should be places that all Londoners – regardless of age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex or sexual orientation – can enjoy and use confidently and independently, avoiding separation or segregation. The management of public space significantly affects how it is used and perceived by the public. Creating an inclusive environment therefore requires not only consideration of the physical design of a space, but also consideration of how it is managed and the rules that govern its access. The Charter aims to ensure that rules restricting the behaviour of the public in the spaces covered by the Charter are limited to those essential for the safe management of the space…"* and specifically, with regards to right of protest, *"…landowners should anticipate and allow peaceful protests or free expressions including public speech, canvassing, rallies and single event/ day demonstrations if they comply with specified criteria for safe management."* This ambition is supported by the Mayor's Commission for Diversity in the Public Realm, which focuses on increasing representation among Black, Asian and Minority Ethnic communities, women, the LGBTQ+ community and disability groups.

Once published, the Charter will be implemented through detailed Section 106 Agreement clauses, including marked up plans, that explicitly refer to the aims of the Charter. The proposals are also designed to ensure that the same rights of access will apply irrespective of land ownership changes[viii].

In cities outside London, without a Mayoral Plan or Public Charter, POPS are often currently provided for through Section 106 agreements reached during the negotiation of planning consent for development and are thus embodied in the planning conditions for that development. There are rarely long-term safeguards however that ensure these spaces will be retained, or maintained, beyond the short term.

In order to reclaim the critical political purpose of urban public spaces in City 2040 and to limit any negative impact of private influence on public freedoms, it will be necessary for central or local government to introduce:

- a right to access POPS – an extension

[viii] The draft Charter includes template text for inclusion in legal agreements: *'The landowner will agree to manage the public space (as defined) and set out in plan number…… in accordance with the principles of the Public London Charter which is attached as Appendix….' (GLA (2020) 'Draft Public London Charter' Section 3.0.4, p.6)*

to designated 'public' urban land of the rights of ramblers to cross private land under the Countryside and Rights of Way Act 2000;

- a 'right to retain' privately-funded public space through subsequent redevelopments of a site; and
- protections such as a free speech covenants[47] to ensure democratic rights to free assembly or speech are maintained on privately-owned public space (POPS).

It might be that these three goals could be delivered by legislation that established joint public-private 'open space trusts'. These would acquire ownership of and a duty to inclusively manage and maintain POPS, ensuring the long-term survival of these spaces and the public good that they represent.

Funding of existing urban spaces and the Trust model

Since the creation of 'new' green spaces in the 19th century (e.g. Derby Arboretum) – even those that were philanthropically founded – there has been resistance in some parts to the idea that rate (council tax) payers might be expected to support the ongoing care of the park from their own funds. And more recently, with the increasing financial hardship faced by many Local Authorities and the prioritisation of delivery of their statutory duties (education services; children's safeguarding and social care; adult social care; waste collection; planning and housing services; road maintenance; and library services) the funding of public open space has assumed a lower priority.

The issue of prioritisation is exacerbated by the silo structures and thinking within central and most local government, so that they are unable to measure effectively the health and wellbeing benefits against the maintenance costs of parks and other urban spaces. The last year however, and the usage of public spaces through the pandemic, has highlighted the critical problems of appropriate funding stewardship and maintenance of urban parks.

It is time to consider other options for funding, an alternative model to exclusively private or public ownership. Central Park in New York and Cornwall Park in Auckland demonstrate that parks that are funded and operated independent of Local Authorities can be well-managed and maintained while delivering a public good in the form of free, open access to amenities and activities. Closer to home, Bankside Open Spaces Trust is successfully maintaining some of Southwark's smaller green spaces with volunteer labour and is

looking to develop this approach with emerging private developments around London Bridge. Early discussions with developers are addressing the issue of how these future spaces can meet the needs of the local community as well as of future occupants. Thus, bringing undivided attention to management and resources creates a new future in the role of park trusts and foundations as a 'third way'.

Another form of urban space, considerable in collective extent but often overlooked, is the marginal areas –the land around tower blocks or between buildings. These might well currently be in public ownership but are not 'officially designated' green spaces (although it should be noted that the new London Plan does include a designation of 'Pocket Park' for areas less than 0.4ha). They are often poorly maintained and current local authority strategy often indicates that these should be developed for additional housing provision. Instead, these spaces could be managed by a Community Trust, enlisting existing residents in imagining or maintaining their immediate surroundings – something analogous to the management organisations mandated to manage open space around new housing developments[ix].

Measuring the Value of Urban Green Space

In response to the threats that face parks and green spaces across the UK, and in the belief that everyone should have the right to enjoy and benefit from local parks and green spaces in perpetuity, Fields in Trust (an independent charity) has carried out research that demonstrates that green spaces in the UK provide people with over £34bn of health and wellbeing benefits and has created The Green Space Index (GSI) – a barometer of publicly accessible park and green space provision across the UK.

The GSI analysis shows that some parks are popular for their specific qualities (because they offer a wide range of facilities) and that corresponding local investment will always be popularly supported. Others, as particularly evidenced in the last year, are popular simply because any green space has proved valuable to the community that it serves, and that proximity alone can be a key attribute.

At a wider scale, the GSI shows that, topographically, cities are well provided with parks and green spaces which are often within a 10 min walk from any point. This apparent generosity

[ix] A useful reference for social housing green spaces is the Neighbourhoods Green programme established by the National Housing Federation, Peabody, and the Notting Hill Housing Group.

of provision is mitigated by the density of the population that are expected to share this and, when this is taken into account, most urban areas fall below a minimum standard of provision (c.35m^2/person[50])[x]. The research embodied in the GSI also suggests that unless Local Authority funding is increased or re-prioritised (with regard to the quantifiable benefits), 230 Local Authorities across the country won't be able to meet the minimum GSI standard by the year 2040[51].

Fields in Trust suggests that the findings of the GSI represent quantifiable evidence in support of protection and increased provision of parks and green spaces – particularly in cities – and a 'call for action'. While it is clear what the long-term goal of such action would be, it is not clear what short-term legislative, legal, civil or other actions should be adopted in order to deliver this goal.

Planning Urban Spaces

The planning and design of new urban spaces is subject to potentially conflicting 'visions' and competing ideas and needs. These represent the different values of planners, designers, artists and developers but all too infrequently the views of the immediate local and wider communities are unheard.

The design and funding of new parks or open spaces rarely represents either the multiple, cross-departmental, benefits that might be delivered or the triumph of access over ownership, nor do they often reflect the density of the soon-to-be-local population. A metric based on the GSI above might provide a useful tool in future exercises.

The planning of open space for City 2040 will require deep structural change to the process on the basis of clear climate change policies. Planners, designers and developers will need to design with – rather than for – nature and people, there needs to be much greater literacy on climate change mitigation and adaptation and the vital role of open space in cities in enabling this. Green spaces need to be planned with a multi-functional lens.

[x]Fields in Trust's Green Space Index has found that there are 2.6 million people who don't live within a ten-minute walk of a park or green space and that across Great Britain, with around 35 square metres of publicly accessible park and green space provision per person. In London only 10,500 people don't live within a ten-minute walk to a park, compared to just under 2.6 million across Britain. However, Londoners have just 20.98 square metres of provision per person – almost half the national average. The capital also falls well short of a minimum standard as measured by Fields in Trust's GSI Score.

Lessons learned from recent case-studies of delivery of new urban spaces

A recent review of the Mayor's 100 Public Spaces Programme – a programme launched by the Greater London Authority (GLA) in 2002 – has found significant issues with the ongoing maintenance and management funding of these spaces, an erosion of the original ambition and commitment by lack of care. A total of 59% of relevant Local Authorities actually anticipate an immediate need to dispose of or transfer the responsibility for public space management of these 100 Space.

Some reflect shortcomings with the community engagement at the outset of the project and the failure of the local community to 'own' the design and delivery process as well as the completed space. But there are examples across Europe, in Bordeaux and Stockholm or Arnold Circus in London, of successful design, maintenance and community ownership of public space. Even the planning stewardship and community ownership of public space at Chilmington Green in Kent provides a useful case study of a new urban settlement in the UK founded around a shared public space.

The viability of protection, provision and maintenance of urban spaces in City 2040 requires cross-departmental working and a critical need to integrate consideration of climate change. Funding restrictions for Local Authorities, as they rely on developer contributions to fund public space, present problems with inequality driven by funding allocated to highest populations. Spending commitments will need to be realigned from the current skew towards funding ribbon cuttings, but not litter picking.

Other issues and ways of funding and managing urban open spaces

Primary shared space of the city

Aristotle thought of the city as 'synoikismos', a coming together of people of diverse family tribes – each with its own history, allegiances, property, and goods – for the sake of trade and mutual support.

> *a city is composed of different kinds of men, similar people cannot bring a city into existence.*[52]
>
> **Aristotle, Richard McKeon (ed.)**

In this understanding of the city, public open space is the primary shared space providing for equal encounter with others. The current movement towards privatised provision or management of public space represents a move towards exposure to communities with a commercially-targeted demographic profile and suggests an editing or reduction of opportunities for encounter.

Without fully open, shared spaces of encounter, the social cohesion and structure of cities may well become increasingly fractured and dysfunctional. The recent development of parklets – reclaiming highway for places, people and planting – has been given added impetus by the need to provide Covid-secure public realm in cities. In Soho, for example, the partial, temporary and complete closure of streets to vehicular traffic, under Experimental Road Closure Orders, has been almost universally welcomed and is now to be made permanent. We need all of the others. Without diverse communities and access, with just a singular community, a city/society may fail.

Public – Private partnerships are really trying to address these issues

The Detroit Greenways Coalition is a partnership between communities, business and the local authority in the US that is creating green urban agriculture corridors through the damaged urban landscape.

Maintenance headaches

Concerns about maintenance often lead to 'public space' and greenspace designs that are biodiversity poor and bland, providing low-risk and low-cost designs that are often superficially nice but low-quality. Public spaces need to be rethought in terms of multi-functional characteristics and especially climate change mitigation and adaptation.

'Tragedy of the commons'

This intellectual tradition suggests, as Aristotle explained: 'That which is common to the greatest number has the least care bestowed upon it'. While there is much evidence that, on the contrary and where there is a tradition of common ownership, communities have proven to be great custodians of the commons, it has to be acknowledged that, in the absence of this tradition – in new places – maintaining community involvement over long periods is a constant challenge and that mechanisms are often needed to take responsibility for the commons.

Village greens

Once protected, with community rights of access, assembly and use granted in perpetuity, designations of village greens could they be used to re-invigorate neglected pockets of city.

The opportunity of the street: trees and water

The street is the biggest opportunity for radical change as the hegemony of transport engineering declines and the amount of space available for the combustion engine and electric vehicles, can be reduced. This movement actually commenced soon after Ken Livingston was elected Mayor in London in 2000, but the mistake made was to replace the tarmac with concrete or York stone paving. One opportunity is to plant a range of suitable tree species down the middle of roads thereby providing shade and pleasure while avoiding the clash between the growing tree and the terraced housing alongside. Swales (or flowlines) are underused in cities and could be installed in place of some of the tarmac when that is repaired or replaced, in order to help with drainage. However, all such interventions will need to involve public discussion.

Looking ahead

The vision for urban spaces in City 2040 is as the primary shared space of equal encounter with others. Although provided and funded through a variety of public, private and community trust organisations, all urban spaces will provide settings for exchange, assembly, free-speech and recreation.

Public open spaces that make a primary contribution to the mental and physical wellbeing of the community, will be properly provided, protected, managed, and maintained.

Capital and revenue funding of public open spaces by central or local government or through community or other trust bodies will reflect the cross-departmental value of the benefits that these spaces afford. Where public spaces are privately maintained there will be community engagement in the point and purpose of both these spaces and the privatisation of their management.

Streets will be reclaimed as spaces – rather than corridors. Where urban open spaces are privately funded there will be covenants established to protect rights of access, assembly and free-speech.

FUTURE VISION

City 2040 should embrace health-driven and inclusive planning of urban space by:

Strengthening civic rights and the design of public realm as primary shared space of equal encounter.

Re-investing in design and stewardship of urban green space as an essential public health need.

FUTURE VISION

Challenges and key questions

- How can legislation and policies take a joined-up approach to both the digital and physical public realm in a way that is inclusive and strengthens transparency, access and civic rights in public space? What needs to happen to facilitate this?
- How can funding and resourcing strategies be increased and optimised to support the design and maintenance of biodiverse public green space solutions?
- How can cities meaningfully measure and monitor public space and green infrastructure to evidence the value of co-benefits for high density living and place-based climate mitigation and support robust policymaking?

FUTURE VISION

Next steps

Policy making

Enact legislation protecting the rights of access, assembly and free speech on all – but especially, privately-provided public space.

Enact legislation protecting a 'right to retain' privately-funded public space through subsequent redevelopments of a site.

Identify the policy gaps to reverse the incremental erosion of public open space (e.g. reducing the potential for open space on residential estates being overbuilt through incremental development).

Design and implement policies (perhaps clear sign-posting) to generate public trust in issues of privacy and data security in the digital realm of POPS, so that it can be effectively harnessed.

Adopt policies to ensure community engagement in design of new places and the reclamation or re-imagining of streets, the Mayors Great Spaces, etc.

Adopt policies in support of community trust engagement in management of existing spaces.

Plan for the long-term: Ensure that sufficient revenue/maintenance capital is included in all budgets from the outset.

Green (and blue) infrastructure, including parks, linear routes, pocket parks and sporting facilities, is key and should be woven through all Local Plans and identified clearly on up-to-date maps.

Design and built environment professions

Treat all urban spaces – across the entire variety of scales and characters (not everything grand) – with equal significance in terms of design consideration, community engagement, adaptability and inclusive access.

Act as advocates for low-carbon and biodiversity, upskilling staff through additional training where required.

Demonstrate the value of well-designed public space through measuring and identifying long-term gains in terms of health, ecological recovery and climate mitigation benefits.

Design public space with well-considered maintenance strategies from the outset, engaging with key stakeholders to ensure that proposals are viable in the long-term.

Landowners, investors and commissioning bodies

Embrace covenants and the embodiments of public rights on the land that they provide as public space within their developments. As has been shown by the Kings Cross development the creation of an identifiable 'place' and generous character can do more for lease valuations than a character of exclusion.

Ensure that revenue/maintenance capital is included in all budgets from the outset.

Local communities

Engage in the future and current management of their space – through engagement in the design process, use, community trusts, or – if nothing else mitigates the diminution of the area, character, access or use of urban open space – direct action.

Learn from the past. The mass trespass on Kinder Scout in the 1930s led to rights of access over open countryside and ultimately to the Countryside and Rights of Way Act 2000. The Occupy movement of the 2010s has raised public awareness of the inequities of wealth, land ownership and influence.

The pandemic has shown us what a successful neighbourhood looks like. Social inequities have been dramatically exposed with many people in cities living in space-deprived conditions, and this has rightly re-opened the debate on how lived experience and density should be defined.

Patricia Brown Hon FRIBA, Director, Central

> We need to turn the conversation around, so it is not just about the density of homes but is also about the density of activity.

Esther Kurland, Director, Urban Design London

C. Clustering and proximity

Is the ideal of the dense, social, mixed-use and walkable city still fit for the future?

Context

2020 and Covid-19 have given us the opportunity to rethink many basic propositions: that the role of the public sector is to simply arrange a few basic things and then get out of the way; that white collar work is best conducted in regimented, centralised workplaces; and that we are safest and most comfortable in crowds. Changing our mind has never been more popular – even if we plan to change it back just as soon as circumstances allow. Under these conditions, it was thought useful to challenge that greatest of planning shibboleths – urban density. In December 2020, during the 'Session C: Clustering and proximity' online debate, a series of invited guest speakers (see section Collaborators) considered this issue with contributions from the Chair and the audience of over 120.

No one was willing to predict, despite the current unpopularity of living and working in close proximity to others, sharing passenger lifts or public transport and the clearly and financially expressed desire for more, preferably a lot more, personal space, that urban density wouldn't 'bounce back' and then only accelerate. The only questions were – whether density isn't a relative concept, prey to the vicissitudes of place, space and time; where it should happen; and whether we could succeed in making it work this time. Is 'good growth' possible?

There is wide recognition of the challenges faced by government, civic leaders, communities, planners, developers, designers and residents in making cities work successfully – including the long-standing issues of affordability, urban sprawl, congestion, pollution and the limited availability of basic amenities such as good quality open space. A range of old problems, once thought vanquished, have reappeared in the last year, including chronic disease, extremes of inequality, forced labour, high unemployment (or very precarious employment) and overcrowding. To these can be added more recent problems including the urgent need to mitigate climate change and the impact of changing purchasing patterns on economic hubs such as town centres. Technology has provided a range of solutions, or possibly just relief, to these and other issues through better infrastructure, environmental control, personal connectivity and communications, home entertainment and close to instantaneous front door delivery of almost all goods and services. These have made city life more liveable and bearable for those who can afford it, but at the same time have allowed the root causes of the problems to go unchallenged and remain largely unreformed. In the UK, the last major and effective attempt at urban reform, the Clean Air Act 1956, is now well over 60 years old.

Density is a routine response to the ever-present demand for space in the city, whether used for commercial, residential or investment purposes. Some development has been accompanied by areas of open space with varying combinations of hard and soft landscaping, play and leisure areas and too frequently landscaping that is solely decorative. As discussed in Session B, there has been far too little sustained creation of proper parks by either private or public sectors. Recent density increase has also followed land availability, rather than as a result of concerted city planning. This has placed buildings at very high densities on ex-industrial sites, especially in the former dockland areas of cities. These are rarely

well-connected sites and the result has been in cities that exhibit extreme highs and lows in urban density, often without any effective planning logic with only patchy transport connections to the rest of their city.

This lack of connectivity has contributed to a trend only exacerbated by the Covid-19 pandemic, the weakened commitment to place – any place. The pandemic has demonstrated that it matters little for many workers and their employers where they are working from so long as they are productive. But with only weak attachment to place, you may as well be somewhere else. The only reasons for being in a particular city become non-work-related experiences: socialising, culture, 'buzz'... The contemporary city now has to work hard to be more than a very expensive dormitory. Its offer to workers and residents can no longer be just an organic and serendipitous combination of work, civic, educational, hospitality and cultural places – in all their variety – and a minimal home. It has to be planned, seeded, subsidised, protected from encroachment and nurtured into existence. If not done exceptionally well, such an environment is fragile and, worse, lacking in authenticity – a greenhouse plant that may not survive in a harsh world.

Looking ahead

City housing

With a projected increase in UK population from 67 million in 2020 to nearing 72 million by 2040 (7.4%)[53] the view that City 2040 will need to be significantly denser, even if there is a temporary dip in growth due to Covid-19, is pretty much indisputable. Where else could the numbers be accommodated without unacceptable sprawl across the countryside? But if cities are to remain successful, how must they effectively plan for this future? At present the density heat maps of UK cities show uneven clusters of high-density spikes, often involving fairly high buildings built in patchwork fashion on small sites as and when they became available. This practice could continue, resulting in ever more tower developments, each justified by the requirement to deliver on the numbers, but still not providing an adequate quantum of new and appropriate homes. Alternatively, a programme intended to even out density across cities, especially in areas where there is already good transport infrastructure, could be instituted. In this latter scenario, building heights would be restricted, and a mat of connected city fabric would become the dominant city form, relating closely to the pattern of Georgian and Victorian terraces and Edwardian mansion blocks.

Work

Remote working, whether from home or a local business hub, was in its infancy prior to 2020. Adoption was slow and patchy. But this changed almost overnight with the arrival of the pandemic, bringing in a forced experiment that showed how successful remote working could be and all without any apparent fall in productivity. It is now close to being fully acceptable to almost all employers and white-collar work looks likely, in the medium term at least, to become a mixture of physically close face-to-face sessions and meetings combined with a greater proportion of other work undertaken away from the office. The overall ratio between these two modes may only be 4:1 or even 3:2 across the working week, but such changes will have a serious impact on the way the city is planned.

The need for centralised office space will not go away but its extent will diminish and character change, to focus on collaboration. Front of house meeting suites and bookable project rooms will remain busy, but the functional desk cubicles out of sight in many traditional offices will reduce significantly. This might mean a smaller footprint, but what remains will need to be more exciting, even theatrical, in order to act as a magnet for staff and visitors on their less frequent visits and to act as symbol of a firm's presence in the absence of being a real working environment.

Accompanying the changes wrought by newly permissible remote working practices will be a number of other long-term trends affecting city centre workforces, including increased outsourcing, zero-hours call-off contracts and, above all, automation. All of these threaten to reduce the number of full-time employees in offices and service firms even further, but reductions due to such causes are likely to get swept up in the fallout from Covid-19, making them hard to disaggregate at first.

As the traditional mainstays of the CBD downsize, there will be a knock-on effect on all the service businesses; the bars, restaurants, sandwich shops, hairdressers, and corner shops they support. This may be further exacerbated by changes to the working day (see below), as fewer workers stay on into the evening – having returned earlier in the day to their home/hub workplace.

Other forms of work, where physical presence is more critical, or even essential (such as education, healthcare, manufacture, retail, and construction) will continue as before, that is to say precariously, but with reasonable certainty that the demand will always

be there, if not always the financial resource to pay for it. Still, they will no longer cluster together, if they ever did. Exploiting its inherent flexibility (and possibility the potential of the new all-purpose Use Class E), such work will relocate itself wherever it is needed, closer to its markets and consumer base. Some of the great once-clustered employers (such as universities, scientific research institutes and the military) will be able to continue to run as they did before, keeping company towns busy, while others will migrate to a remote working model.

Dispersion

Yet – see above – the numbers of both workers and consumers in cities will be incrementally greater, so where will economic activity take place?

There will be more employment set within, or based from, people's homes. In part this will be remote employment, enabled by good broadband connections. This will be accompanied by more domestically based self-employment – mainly in-service provision, but also and to a lesser extent, retail and manufacture. The increase in such activity will put a continued premium on increased and particularly appropriate domestic space; whether it is in home offices, studios or outbuildings that can be used for work. In this context, recent changes to commercial and residential use classes are a first step in a necessary reconsideration of the nature of domestic property and the idea of strictly residential neighbourhoods.[xi]

Secondly, there is likely to be an increased demand for locally based workspaces, either divided into single company domains or shared between multiple workers running or employed in different businesses. Serviced office spaces are common already, but they may well become standard and more visible presences in local centres. Conventional business premises will continue but may be better able to operate from local centres, as an increased range of other businesses around them provides a supportive network of services and companies. They will be joined by those firms migrating from CBDs, liberated from the need to be in the city centre by technology, the online availability of specialised services, a reduced need for centralised accessibility for a commuting workforce and an evaporating requirement to be in close proximity to their competitors. This may eventually all contribute to the saving of the high

[xi] As a corollary point, consideration must be given to the tax regime to ensure that properties are not brought inadvertently within scope for capital gains tax.

street as an economic proposition, despite concerns that the use class amalgamation will lead inexorably to a proliferation of residential rather than commercial high street premises.

Thirdly will be the continued expansion of peripatetic work based in or from meanwhile spaces and cafés. Delivery vehicles and services will be adapted to suit workers whose temporary-style employment can be run largely from a smart phone, but who still need physical facilities, such as washrooms, supply bases and other support infrastructure. Adaptability is key here.

Transport and infrastructure

With fewer workers going into CBDs each day there will be a release of pressure on the transport system. In addition, if many people are only coming in for meetings and other specific events rush hour congestion will be relieved and spread across a broader time period. The impact of this is likely to be greatest on traditional commuter routes from the suburbs into cities but it will also affect cross-city travel. Conversely there will be a greater need to travel between nodes in cities as functions become decentralised and businesses seek cheaper rents in outer urban centres and satellite settlements. There will be an increased demand for and on orbital routes.

Similar impacts will be made on infrastructure requirements with demand reductions in central areas and increases elsewhere. There will be growing demand for high quality and capacity broadband and mobile services in all areas.

Local growth

As development in central areas reduces it will rise in local centres; but there will be a choice for many workers between premises on high streets, other local urban centres and business parks. Choices will revolve around the quality of facilities and transport convenience, but it will be up to Local Authorities to influence which answer they want to be the more successful in whatever way they can.

Given the general desirability that high streets, already struggling pre-pandemic with the migration of sales on-line, are given a new lease of life, it is assumed that they will work hard to attract the newly locally-focused workforce. This will mean possibly increasing their density to provide additional homes and workplaces; offices, light industrial and other creative uses, with the aim of generating a thriving local economy. The greater challenge will be then to keep the high street open and accessible for all, with affordable space as well as

more upmarket facilities, restaurants, bars and housing. Planning policies will need to change to enable and promote successful, mixed-use communities. This might well require tempering the natural exuberance of market processes and enabling Local Authorities to protect certain uses as part of the planning process.

Leisure, entertainment, hospitality and retail

People will still want to travel to major social, sporting and cultural events – including football matches, concerts and festivals – but in practice there is little reason for these to be held in traditional cultural quarters in cities. Just as stadia, cinemas and major concert venues are increasingly located out of the centre, albeit with good transport links, there is every expectation that theatres, opera houses and museums will follow them and relocate to local centres, contributing to their future success.

Similarly, special measures will be needed to ensure the success, welcome and incorporation of the night time economy into local high street areas in a way that avoids placing undue stress on increasing numbers of residential occupiers.

Much has been made of the impact to bricks and mortar in the retail sector from online sales, but from a capital allocation view there is a significant silver lining in the opportunities for repurposing otherwise redundant space. The challenge will be to ensure that local centres maintain and develop their own distinctive identities and do not succumb to bland, normative templates. Creative and imaginative town centre curation and management will be critical to their success and the means will have to be generated to provide it with adequate resource.

The centre

City centres, despite losing activity, commerce and general footfall will undoubtedly survive, especially when they have a unique historic quality and environment. After a prolonged period of lockdown, people will be hungry for connection to city spaces – for opportunities to engage with places and people. This might be via walking, or cycling, or even sitting in pavement cafes. City centres may well have to intensify what they do to make it work, but they will increasingly function as very particular examples of the local.

RECOMMENDATIONS

The future city will become a balanced multi-hub system:

Cities will continue to grow in population, but this will be primarily focused around local centres, which will need to respond accordingly.

CBDs should transform and intensify as meeting hubs and for bringing together project-based creative industries supported by reduced but more intensive entertainment and hospitality functions.

RECOMMENDATIONS

Challenges and key questions

- The shift to a multi-hub system based around local centres will require infrastructure investment. How should strategic planning facilitate this change?
- What happens to the night-time economy?
- How can inter-nodal (orbital) public transport be organised and, if necessary, subsidised? Government funding commitment is vital and enables more than travel in the broadest sense. Transit infrastructure supports both agglomerated industry and social mobility. And yet while financial sustainability depends on volume/mixed use of space, better land value capture could justify and support necessary investment.
- Strategic site allocation within our already dense urban centres is often entirely dictated by housing due to a shortage of land and the pressure of growth rate and numbers. Does the current strategy for housing allocation need to be re-considered? If so, what should the alternative solution look like?

RECOMMENDATIONS

Next steps

Policy making

Determined leadership is required supported by a planning system that recognises and supports diversity – both in terms of local high street areas and the creation of villages within cities to shore up against losses to a suburban renaissance.

Protections should be introduced to maintain authenticity and identity while facilitating the transition from strong centre and weak outer nodal model to the more balanced multi-hub system with competing but strong and characterful individual centres.

Local citizen panels to be established to identify growth areas and existing centres in need of revival. Citizens panels should be tasked to propose solutions with planning officers for both developing and also providing long-term management of their centre, including requirements for achieving Zero Carbon emissions for each area. Planning policies should be developed, consulted on widely and resourced to support those propositions.

A deliberate programme of relocating key parts of civic infrastructure to local centres should be developed and followed.

Local transport plans should be obligatory including incentivised targets for traffic reduction, cycling, walking and access to public transport. A longer-term aim of significantly reducing private motorised transport should be adopted.

Design and built environment professions

Local built environment professional groups should be tasked with providing vision, leadership and monitoring, supported by institutions and government and should regularly engage with public consultations on proposed changes to city planning policies.

Built environment professionals in collaboration with Local Authorities should take on the responsibility of putting forward propositions for their surroundings and environments.

All professionals to ensure that their propositions deliver (or are capable of delivering) Zero Carbon outcomes.

Designs for local centres should be locally distinctive and informed by local community members through meaningful engagement. Professionals should encourage clients to engage with community stakeholders early on and also throughout the design stages to inform proposals.

Landowners, investors and commissioning bodies

Work in collaboration with Local Authorities and groups in order to contribute to the bigger picture of change.

Implement strategies focusing on Zero Carbon outcomes for developments or schemes.

Score development opportunities and schemes in a way that calibrates the provision of successful community assets (such as green space and workspaces) over simple returns.

Enable connectivity between sites – reach out to neighbouring communities.

Undertake significant qualitative research in the client base to understand what clients (people) are looking for.

Local communities

Community groups to work in collaboration with Local Authorities and design teams in order to contribute to the bigger picture of change.

There is an opportunity to re-engineer our cities to tackle the public health and climate crises together.

Simon Birkett, Clean Air London

> A human-centred design approach should be at the heart of the process. We need to enable better access to evidence so that citizens can ask for more and collaborate more effectively with city leaders.

Erin Walsh, Connected Places Catapult

D. The impact of achieving clean air

How do we equip City 2040 to reap the benefit of whole systems thinking.

Context

Polluted air has triggered a multitude of urban issues: the loss of fresh air as a basic amenity; our predilection for sealed gas-guzzling buildings; reinforcing our heavy car dependency; the degradation of open space and its loss of biodiversity; increased urban heat island; and the serious human health impacts.

In December 2020, during 'Session D: The impact of clean air' online debate, five invited guest speakers (see section Collaborators) attracted an audience of over 70, and contributions included those from the Chair and participation from the audience.

The way we formulate single-issue city policies misses so many of the linkages for potential benefits that exist far beyond the individual policy silo. For implementation, this lack of inter-relationship understanding loses the mutual support that clustering can provide to counter the roll-out slip-back so often seen with individual polices. It also misses the added compound benefits above and beyond those of the individual silos. It loses the ability to join traditionally separate issues into combined circular economy thinking.

This would not be the first time Clean Air has been a trigger for a step-change in urban quality of life. Great benefits were gained following the introduction of the Clean Air Act 1956[54] which went well beyond simply removing smog from the air. For the first time it regulated both domestic and industrial smoke emissions and is now considered by historians as a milestone in global environmental protection. While its impact on improved health was enormous, its wider positive impacts were a turning point for the expectations of improving urban living. It is still regularly quoted worldwide as the key stage in recovering a city from its industrial past. This legislation established smokeless zones and provided subsidies to householders to convert to cleaner fuels (smokeless solid fuel, gas, and electricity). But this energy transition did not happen overnight. It took around three decades, and another Clean Air Act in 1968 to deal with wider issues. So, while the concern of visible air pollution may have been largely addressed, we now have to understand the health and wellbeing impacts of the invisible components of air pollution. This new sea-change in demand for Clean Air is now supported by investment capital, which we heard in Session D goes so far as to score the opportunity in potential development sites by recorded air quality. This next stage will be far more difficult, and the problems are significantly more wicked[xii] but we cannot take another thirty years to deliver the full range of potential benefits of truly Clean Air. This time around Clean Air should be a metaphor for joined-up policy thinking to understand the wider linkages and to deliver on far higher aspirations than just clean air.

[xii] In planning and policy, a 'wicked problem', is a problem that is difficult to solve due to complex interdependencies and often incomplete, contradictory, and changing social requirements that are difficult to reconcile. The term was first introduced by Rittel and Webber in 1973 *(Rittel H.W.J and Webber M.M (June 1973) 'Dilemmas in a General Theory of Planning', Policy Sciences, Vol.4, No.2, p155-169)*.

The Covid-19 lockdown has brought about a range of unanticipated side effects. It has shown people what dramatically cleaner air can deliver: the quiet and pollution free streets; the ability to walk; uninhibited cycling; far greater appreciation of green spaces and vistas unlike anything experienced in cities in living memory. It has reminded people that, despite a huge and ongoing policy framework for cutting air pollution, there are wider related issues that need to be addressed. So, while our filthy air is still the cause of up to 36,000 early deaths in the UK each year, could we not also address the expected 3000 heat wave deaths in the 2020s rising to 7000 annually by 2050[55], as well as the wider health benefits from adding green lungs across our cities? The Clean Air challenge this time around is largely invisible, but a more visible vision and tangible benefits are perhaps now sufficient for the step-change needed.

The benefits will go far beyond the Clean Air itself. Linking together many interrelated issues allows benefits that far outweigh the sum of the constituent parts. As just one example, cities have the ability to eliminate the threat from anticipated future climate change temperature rise if the various parts can be drawn together as components in an integrated whole. But currently we appear unable to take a 'systems thinking' approach to urban policy. Instead, Clean Air is seen as a single siloed issue with its benefits pitched separately from the many other environmental issues. The potential alignment of physical issues benefits is set apart from consideration of any additional social benefits and the further equity issues resulting from joining up interconnected issues. As a result, there are many actions that cities can take to address problematic issues if they adopt a systems thinking approach.

Looking ahead

Questions:

- Does recognising and unlocking such additional cross-cutting benefits require a whole-systems change?
- How do silo-based specialisms and specialists change to start focusing on developing the whole?
- How does the scale of contribution from each policy area get locked in to enable other policy areas to deliver their required parts and to their full potential?
- Does demonstrating the wider benefits of the greater whole help to incentivise the contributions and delivery of the individual parts?
- Is the lack of suitable communications holding back the narrow specialist interests from visioning the wider whole, and hence seeing how their contribution can better support the whole?

It is so often difficult for those involved for many years in urban policy and planning to recognise that the goal posts have continued to move and there are new issues and synergy opportunities that must also be brought into the mix. But, while a 30-year timescale for understanding and rolling out implementation may have been adequate in the past, this rate of change needs to accelerate fast.

The response to climate change illustrates a tangible example of why the lack of cross-linked systems thinking needs to change. For some 40 years climate change has been a background issue, but it is only very recently that it has shot up the public agenda with demands for meaningful change. And yet addressing it involves numerous specialist silos, with policies in one area often to the detriment of others. Rolling out heat pumps to reduce carbon emissions, which meanwhile increase energy bills for the fuel poor, is just one such illustration. This clearly shows change is needed to break out of the current siloed policy development.

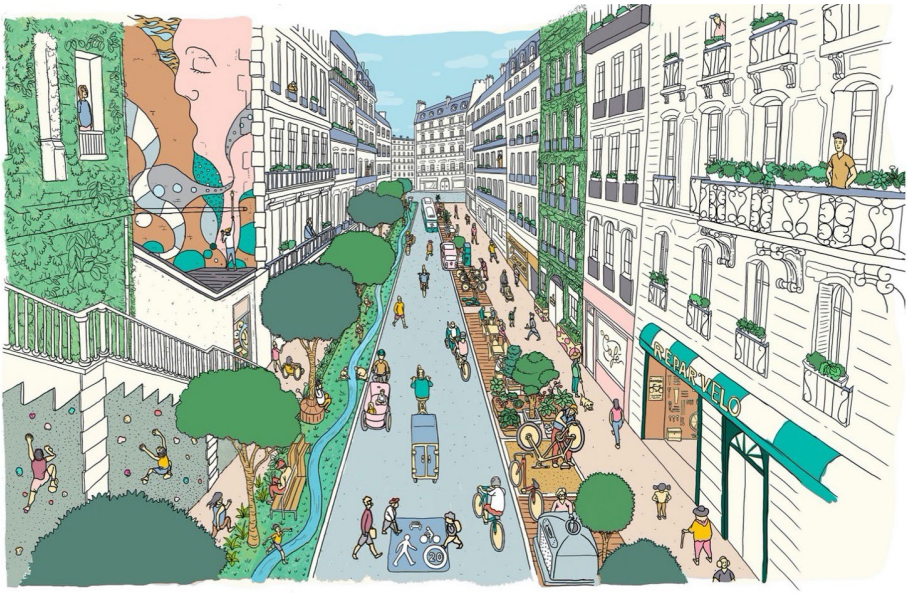

Fig.B

'Paris 2024' – Paris en Commun, © Nicolas Bascop[56]

Parisian Mayor Anne Hidalgo's 'Paris En Commun' project sets out a vision for a decentralised 15-minute city to cut pollution and stress including: Parking places transformed into terraces and gardens; peaceful streets for pedestrians and cyclists; a garden downstairs from your house; safe routes for children; and many local services.

While to date our climate change response has largely focused on reducing greenhouse gas emissions, there has been relatively little focus on the adaptation response and with it, our social response. Perhaps encouragingly, Environmental, Social and Governance (ESG) requirements are fast becoming the guiding principle for organisations, corporate benchmarking, particularly as they enable access to lower-cost capital. Hence, there is now a wider range of drivers that could use Clean Air as the trigger to pull together the indirect impacts related to climate change and wider social and economic benefits. These can be part of a wider systems approach that draws in and couples it with other policy aspects; achieving far greater benefits for the whole than individual policies can deliver. This includes delivering a positive green premium on asset valuation, which has to date been focused on, if anything, a brown discount caused by higher running or necessary remediation costs.

In the context of generating joined up thinking, consider how, as well as delivering Clean Air by reducing pollution emissions, electric vehicles also reduce noise and heat pollution emissions. They reduce street noise, which collectively allows operable windows for all buildings and natural ventilation, allowing mechanical systems to be turned off or eliminated completely. This would reduce the energy use and consequent building heat emissions by about a half for our most energy intensive buildings[57]. Added to this, electric vehicles reduce transport heat emissions by more than 80%[xiii] compared with fossil fuelled equivalents[58]. Other related policy areas can also contribute. Scaling up urban vegetation increases transpiration cooling[59] as well as local shading as it converts rainwater gathered using sustainable urban drainage (SUDS[60]).

While individually each of these particular policy areas has a minor impact on urban temperatures, if considered in systems thinking terms, there is collective capability to lower the existing urban heat island effect by the same order of magnitude as the expected urban temperature rise due to climate change. Seen collectively, the quantum of improvement also triggers a positive feedback virtuous circle. In this example, progressively reducing urban temperature and mitigating global warming allows buildings to use natural

[xiii]The ratio of point-of-use efficiencies between electric and internal combustion vehicles gives the ratio of heat emitted. All energy used by a vehicle is converted to heat in accordance with 1st Law of Thermodynamics).

ventilation and avoid installing the energy/Greenhouse Gas (GHG) emitting air conditioning that would further propagate local temperatures. The energy supply grid is thus able to switch more easily to zero-carbon electricity as peak demands are reduced. Likewise, outdoor spaces remain hospitable, contributing to improved health and wellbeing.

The key component of this systems approach is the ability to collectively quantify the scale of combined benefits where the individual components would otherwise be siloed as insignificant. Systems thinking informs the appreciation that individual policies and the scale of their contributions go far wider and are each essential for enabling wider benefits. The opportunities for City 2040 are thus significantly greater than suggested by single issue topics like Clean Air. But grasping these opportunities needs to begin today before continued business-as-usual closes them down.

Why is the systems approach and wider collective benefits rarely considered?

Urban planning policies cover most of the individual issues, but within separate policy silos. Each policy is developed separately and is largely supported as a separate technical issue. Each delivers benefits, but without the collective potential or often the scale needed. During implementation individual policies then tend to be diluted by funding competition with other policy issues within budget constraints. Further pressure comes as so many Clean Air policies require behavioural change from stakeholders who were not engaged in policy development. Losing momentum, they predictably fall short of what they could and should achieve. Alone they do not have the critical mass of policies designed to support each other.

Where policies are well-considered and brought together for mutual support and dependency, they are bolstered against dilution. On its own, for example, the requirement for SUDS to support large-scale vegetation is normally insufficiently quantified/defined and difficult to defend. Too often the extent of vegetation needed for a meaningful cooling impact loses out to cheaper extensive paved areas. Yet if vegetation were linked with electric car and natural ventilation policies for buildings, and their mutual dependence recognised as essential for significant added benefits, then individual policies become more defendable.

How to sell the whole systems approach?

Specialists within individual policy silos will always advocate passionately why their particular area is so important and should gain the biggest share of available investment. But it takes a wider, and rarely taught understanding of how their individual policy area fits into the whole to drive wider benefits. Each specialist tends to speak a different technical language and consequently messages between them become over-simplified, losing the subtleties, linkages and inter-influences that are the basis of systems thinking. Similarly, community and policy leaders typically struggle to join these technical silos, setting the wrong scene for wider society when it comes to discussing and prioritising for the future evolution of our cities.

The demands of Zero Carbon will require a huge and necessary restructuring of the country's economy, and City 2040 needs to be ready to support this. Key to this is facilitating widespread engagement on multiple policy directions. A whole systems approach is as much about selling a system for collaboration, as it is the implementation of ideas and solutions that this collaboration brings about. Better linkages are needed between government and private sector risk and reward.

City 2040 must also facilitate meaningful engagement with local and central government; micro and mobile businesses, residents, community organisations and NGOs; for which suitable consultation systems are not yet in place. The recently aborted Green Homes Grant scheme, the Green Deal scheme, and the Code for Sustainable Homes, offer examples of what goes wrong when engagement is selective and precludes many of the impacted stakeholders. Establishing productive two-way communications with all of these stakeholders is essential to the successful implementation of joined-up policies.

We need more effective means to illustrate how the aspirations and the resulting policies fit together. Urban policy has been guilty of diluting issues to the point they lose relevance. It is a communications challenge. Community leaders, policymakers and technical specialists each use their own jargon, effectively excluding wider discussions and engagement. While we may need to establish a 'hook' to illustrate the importance of essential linkages between policy areas, a wider picture can put these into context. Understanding this is as important for technical specialists as for politicians, the media and the general public.

Focus groups for 'consensus building' that use over simplified bullet points almost inevitably fail to promote the depth of understanding, context and direction needed. A wider definition of a common vision is needed to illustrate the multifaceted nature of the whole, ideally one that in 10 seconds can be grasped by all important stakeholders.

These ideas are well conveyed through visual imagery, rather than simple soundbites. Take for example, the principle of materially reducing road space, including halving on-street parking[61], to free up space for greenery and community amenity – reflecting car use that can be as low as 14%, yet occupy 50% of public space[62]. Presented as an illustration, the wider context and available benefits of this proposal are instantly conveyed, from child-friendly accessibility to property value drivers. Immediately the discussion engages all stakeholders on the collective benefits gained rather than a defence of where to put the car (see Fig. B), laying the foundations for wider engagement. Likewise, this approach will also help specialists to recognise the wider direction of travel, so they can respond by focusing their technical input in support of the bigger picture.

This level of common communication will become ever more essential as far wider engagement on change is expected across society, be it for Zero Carbon, climate adaptation or Clean Air. The days of professionals in ivory towers dispensing advice by way of dusty tomes should be long gone.

Thus the vision for City 2040 must be pitched in visual terms to provide a common basis of engagement and agreement across a broad set of stakeholders. So, buildings may have opening windows, but that is not the vision. There is city walkability, but that is not the vision. There is a 15-minute community, but that is not the vision. Urban heat island research is essential, but that is not the vision. With a common set of images to describe the vision, each of the contributing technical silos can feed into it illustrating how their constituent component contributes to, and links into, the benefits of the overall whole.

City 2040 will have far firmer foundations when a whole systems approach with more universal communication ensures that in exploring ideas, agreeing actions and allocating remits for different stakeholders the essential cross-linkages are appreciated.

RECOMMENDATIONS

City 2040 should harness the opportunity offered by Clean Air to reverse urban climate change impacts and change how we address issues such as Zero Carbon by:

Abandoning silo-thinking in favour of agile modes of collaboration.

Freeing up 10% of urban areas as extra amenity space.

Doubling urban greening as part of materially reducing road space, including halving on-street parking.

Adopting circular economy principles.

Embracing more inclusive civic engagement in support of change.

RECOMMENDATIONS

Challenges and key questions

- We have so far been unable to sell a vision to our citizens of what our common future can be.
- The city, being a cluster of many minorities, has disengaged too many stakeholders from civil discourse.
- Built environment and policy professionals work, think and engage in silos.
- Wider engagement needs a fundamental shift away from the historic model of dispensing professional advice from an individual silo.
- Can we develop updated ways of communicating complex interlinked ideas and actions to society in a time-efficient and digestible form?
- Which future urban opportunities are predominantly multifaceted and require far more joined-up thinking?

RECOMMENDATIONS

Next steps

Policy making

Move away from current dialogue that dilutes ideas and systems thinking down to word bites – such as 'Clean Air' – this destroys the multifaceted thinking needed.

Separate the wood from the trees – the likes of digital twins, Building Information Modelling (BIM), Circular Economy, Clean Air, etc., are all simply parts of the means to an end. So, what is the picture of City 2040 that these are but constituent parts of?

Communicate to the broader range of stakeholders in ways they can better relate to.

In an age of instant 'false news', the depth of the message becomes important, together with the how it is communicated.

Improved communication and engagement is needed to connect narrow technical specialists as well as multiple lay people and groups.

Learn lessons from modern advertising – 'a picture is worth a thousand words' and must be communicated in terms widely understood by society, before the shorthand of buzzwords can be used to continue the engagement.

Grow the appreciation that most urban development issues are multifaceted and require systems thinking.

Design and built environment professions

There needs to be greater cross-disciplinary understanding of the multi-faceted issues.

Focus on upskilling built environment professionals and technical specialists for cross-discipline communicating and public understanding.

Introduce more visual communicating of principles in legal, technical and planning documents.

Harness media sector skills for communicating multifaceted ideas. Grow the appreciation that the wider public understand detail when presented appropriately.

Landowners, investors and commissioning bodies

A more informed public will make greater demands on the performance of buildings and public space over the long term, which in turn cements longer term commitment to space and value.

Expect to engage and communicate with larger and more diverse sets of individuals and groups reflecting the present make-up of urban communities.

Offer the community your longer-term City 2040 vision.

Communicate the reassessment of capital value based on longer-term resilience, avoiding the creation of stranded assets.

Expect your building not to be replaced in future, and so provide flexibility and adaptability in use and materials (circular economy principles, think about re-use).

Local communities

Explore the City 2040 community vision in terms that all members of society can relate to.

Develop engagement in an inclusive way across all community groups. Identify catalysts and mobilise groups to help Local Authorities create inclusive forums.

Residents, neighbours, art groups, children's play groups etc all need to come forward.

Community support for delivering public goods should be available so that all communities can benefit regardless of local resource.

By various measures the UK is the most unequal country in Europe. We've also become dramatically more unequal in the last 12 months as a result of the pandemic. I think we are entering a pretty angry period as we are leaving so many people behind.

Prof Danny Dorling, University of Oxford

The definition of real estate has broadened, and investors are seeking longevity and certainty. Significant capital today is much more comfortable investing in mixed-use, placemaking and urban regeneration which are fundamental to our future city.

Ian Marcus OBE, Senior Advisor, Eastdil Secured, CULS

Conclusions

It became clear from the six evidence-based sessions on City 2040 that 2020–21 is a moment of opportunity for massive, global change in urban planning. Cities will undoubtedly recover from the impact of Covid-19, but they will do so in ways that will not be the same post- as pre-pandemic. In particular, work patterns have altered dramatically, affecting both daily attendance at formal places of work, the way people choose to meet and liaise and their use of local neighbourhoods. It seems inevitable that this fundamental shift in work will play out in the built environment.

The prime conclusion of the City 2040 consultative work is that individual UK cities have the potential to be transformed into a network of multiple local hubs, with a more even spread of population density, commerce, social and cultural facilities and infrastructure provision than exists in the current centralised pattern. This proposition, which would have the greatest impact on large metropolitan conurbations – but could play out across all cities – does not see the end of the 'centre' and the central business district (CBD), instead it envisages the existence of many more local hubs in cities, each with their own characteristics and strong identities.

This report finds that there is great potential for growth, however this must take place across the board, focusing on social and environmental improvements, and be implemented in a way that generates more than straightforward economic payback.

Private capital will remain an essential ingredient for success, but with new metrics for gauging the success and sustainability of financial investment, the city as a living, breathing entity will be encouraged to develop in rich and multi-faceted ways.

The Edge's process of testing ideas and propositions through debate and inquiry has generated many different viewpoints on the future of cities, with compelling contributions from city leaders to courier riders, broad thinkers to single issue campaigners, and major commercial developers to infrastructure planners. The four Key Themes in this report reflect this diversity while identifying the many areas of confluence. Out of these, a vision of City 2040 has emerged that takes into account the strong trends and challenging circumstances affecting today's cities, but finds the potential for entrepreneurialism and political leadership to make a real difference.

Macro-issues

Despite the clearly pivotal influence of the Covid-19 pandemic, cities are also subject to many pre-existing macro pressures. As explored more fully at the outset of this report, these include:

- **Demographic change –** ever-increasing numbers will move to cities across the world for jobs, entertainment and experience. Simultaneously many parts of the world, including the UK, are aging, requiring new patterns of living and support.
- **Housing need –** caused by an overall lack across the UK of suitable, affordable and adequately-sized living accommodation.
- **Loss of open space –** the incremental and continuous loss of green and blue publicly and freely accessible open space has been centuries in the making, and there is considerable pressure on those outdoor spaces that remain available.
- **Air quality –** cities struggle to maintain good air quality notwithstanding greater understanding of, and legal jurisdiction over, the damage that invisible pollutants cause to human health.
- **Technology (the 4th Industrial Revolution) –** with new IT services including: communications; social media; the near-instantaneous delivery of goods and services; the ability to maintain complex logistics; and the real time tracking of almost everything (be it materials, vehicles or individuals).
- **Inequality –** rising and polarising levels of inequality between the haves and have-nots, affect access to even relatively ordinary services, health outcomes and life prospects.

- **Globalisation –** interconnectedness drives the potential for rapid and uncontrollable (and frequently destabilising) flows of people, money, information, diseases, threats of violence and more.
- **Valuations –** a relatively inflexible concept of property valuation underpins global property markets, based around the mid-twentieth century commoditisation of rental income streams in commercial leaseholds, as exemplified by the model full repairing and insuring (FRI) lease.
- **Climate change, coupled with biodiversity loss –** is bringing increased instances of extreme weather events, risks of infestations and disease, and the need for far-reaching measures to counter both the source of the problem (mitigation) and its effects (adaptation).

Many of these issues are often described as diseases of affluence, but they all have an impact on life in and the fabric of cities, whether rich or poor, north or south. It is only in exceptional circumstances that even a handful of such pressures can be held at bay at any one time. In this report, it has not been possible to treat all these macro drivers for change separately, particularly since they tend to work together symbiotically. A few have been considered individually, but it is their collective impact that has been at the forefront of the authors' minds.

The Covid-19 pandemic

As it swept across the world in 2020–21, the impact of Covid-19 was an ever-present but conceivably misdirectional factor during our period of research, writing and debating this report.

Although it may have provisionally masked the underlying pressures for technological and social change it has also acted as an accelerator, demanding and enabling a shift to a new normal and encouraging us to build back differently. In forcing new patterns of living, even where these were only intended as temporary, the pandemic can be regarded as a special instance of a macro issue.

However, because of its devastating speed and impact, as well as its universal nature, it has taught us very immediate lessons, brought forward the impact of some of the otherwise slower-acting or incremental pressures and caused a self-examination that merits separate consideration.

With widespread vaccination, and taking account of historic profiles of infection development, life looks set to return to a high degree of pre-pandemic normality, but the long-term impact will be substantial. Behaviours and habits have morphed; new working patterns have moved from tolerance to widespread acceptance; and our demands on each other changed. We have learnt that local is good, travel is far less necessary than we previously thought – especially for work, with its daily demand for commuting into cities – and that we value things like open space, breathable air and quiet in cities a great deal more than perhaps we (collectively) realised.

The point has been made frequently that one important effect of the virus has been to radically accelerate what was always going to happen anyway. This is, of course, especially true of cities. Different lockdown experiences, and the pressures of living cheek by jowl for extended periods of time, have strongly increased the pressure for better living conditions, better facilities and access to spaces, goods and services. We now know, if we conceivably didn't before, the importance of adequate space in homes, especially considering the need to use them for work and learning as well as living. Similarly, the value of urban public realm is now crystal clear and with it the need for good stewardship, maintenance and periodic renewal. Now fully conceptualised and stress-tested – such realisations are unlikely to go away: the genies are out of their bottles.

The pandemic has also led, to a degree, to city flight as people seek greater and safer space elsewhere, supported by greater freedoms to work remotely and the reduced need for going physically into a central workplace. City flight is not new, but it has traditionally been balanced by a countervailing influx into urban centres, especially by the young – including students, immigrants (short or long term), the jobless and those in search of experience. This time the immediate loss may be greater, but while the continued trend to urbanisation will likely lead to a rapid replacement of people, but without intervention the greater loss may be one of stability, skills, knowledge, mentorship and leadership. This will take longer to repair.

The change in the residential population of cities is likely to leave an observable 'anomaly' on demography charts, with a significant impact on the geography of work. Working from home and other 'elsewhere' spaces alongside readily available video-conferencing will permanently reduce the numbers of workers in offices at any one time, especially in CBDs. This will affect workers beyond the 'office' and

potentially include other sectors such as creative disciplines, research and teaching. There is likely therefore to be a resultant drop in commercial rents for anything other than high-quality Grade A stock; a divergence in value driven by quality and exacerbated at the lower end by landowners and operators failing to invest to cope with the demands and desires of a brave new world. Similarly, the much-discussed, if possibly prematurely-claimed, 'collapse of retail' still needs attention. Consumer trends to online retail were already well advanced before the pandemic, but can the threats exacerbated by loss of footfall (workers, residents, and visitors) in CBDs and city centres due to Coronavirus be arrested? Will the nature of the high street and shopping centres irrevocably change as new uses take the place of old retail, triggering fresh opportunities?

The IT revolution that enabled remote working has also accelerated the rate at which automation has replaced other jobs, adding further to pandemic-related job losses and work relocation. It is continuing to fundamentally change the nature of work in the city. Property investment priorities were shifting prior to 2020 in response to this, looking away from offices and retail and into new sectors, summarised in the expression 'beds, meds and sheds'.

These 'new' opportunity areas (residential, logistics and healthcare/ life sciences) are most likely to be on the outskirts of cities – away from the CBDs. And again, this trend has been advanced by Covid-19 although policymaking has yet to respond, whether in planning, trade policy or infrastructure deployment.

The pandemic has also reinforced serious issues of inequality and societal polarisation, whether based on geography, class, ethnicity, health or age. Isolation and physical and, particularly, mental health were clearly pre-existing concerns, but the pressure to resolve them is much greater, especially given the need to achieve some nationwide healing process. The Government's levelling-up agenda is more urgent than ever.

City strengths

Many of the strengths of cities are age-old and well-rehearsed. They exhibit high levels of resilience and willingness on the part of inhabitants, to take some recent examples, to build community relationships, experiment with traffic flows and explore alternative uses of external spaces. There is an undeniable appetite for renewal. Cities have the ability to bring together diverse groups of people of many ages, cultures and backgrounds in a tightly functioning ecosystem, supported by different organisations, agencies and businesses.

A successful city park is a good example of how a single space, relatively cheap to run, provides exercise, social and community interaction (both planned and serendipitous), education, employment, cultural engagement, nutrition, mental wellbeing, shade, air cleansing, wind control, urban cooling and training opportunities; factors that ultimately allow other parts of the city to function. Cities are already full of hybrid places that successfully mix multiple uses operating to complex daily, weekly and annual patterns.

During the course of the pandemic, people have seen their cities in new ways. Largely empty of traffic, with greatly reduced pollution levels, they are places to walk and cycle to and through. This alone should be enough to drive change and it highlights, as cities look to the future, how existing infrastructure systems and an extensive built fabric are capable of being repurposed to new uses. Cities have the workforce and the education and research capacity to nurture and support development. They are places that people want to visit and experience living in. The challenge now is for them to adapt and flex.

Urban change

As cities recover from the repeated and extended lockdowns of 2020/21 they will find life distinctively altered by the pandemic. Patterns of attendance at formal workplaces, especially offices and other white-collar settings, may never resume their previous patterns. As remote working removes the need to 'be there' , the way people choose to meet, socialise and network will change. New hybrid working forms will develop, requiring different spaces, timings and locations.

In the short-term, economic recovery requires cities to become more agile and able to accommodate a rapid turnover of activities, as alternative options are trialled and tested. This is expected to create pressure for shorter, more flexible lease arrangements. Some companies are already choosing flexible served office space in preference to a long-term FRI commitment. Elsewhere, planners and estate landlords are already thinking practically about the inherent value of accepting 'meanwhile' uses on sites prior to any permanent development, or opening support spaces to provide services and logistics to the gig economy. Speakers in our sessions on infrastructure provision even recommended installing 'lite' versions of transport provision (such as trams and light rail) instead of the more traditional 'heavy' road and rail installations, to better service and respond to that agility[63].

The opportunity

The 'breathing space' of experimentation and non-permanence in City 2040 may buy much needed time for urban planning and development to respond adequately to two clear medium-term dangers: growing social inequality and climate change. Significant measures are required to tackle both of these, and whether these are adopted willingly or forced on unprepared cities is a major question. Key voices, such as the International Monetary Fund (IMF), stress the post-pandemic need for a more equitable, greener and durable recovery[64], and it is clear that investors, especially those with long-term stakes in cities, are taking notice.

The City 2040 sessions heard how development in areas with poor air quality is being actively avoided, while ESG requirements are prioritised and concerns over stranded real estate assets are leading to development being relocated. There is a strong belief that investors must avoid a potential 'brown discount' as much as they might chase a 'green premium'.

With change already occurring, this report is taking the opportunity to articulate a vision for the future city; one based on transforming our existing cities within a realistic time frame, using available resources as they emerge from a combination of sectors. Such change will, by necessity, involve multiple different players and take place on numerous fronts, but intensive collaboration is needed between agencies to ensure that benefits gained are multiplied and compounded for maximum efficacy.

Vision

The prime proposal for City 2040 is for individual UK cities, especially, but not only, the large metropolitan ones, to be transformed into a network of multiple local hubs; with a more even spread of population density, commerce, social and cultural facilities and infrastructure provision than exists in the current centralised pattern.

The proposition does not see the end of the 'centre' and CBD, but rather envisages many more of them, each with their own characteristics and strong identities. Different commercial and communal activities will have different agglomerative effects; some cities or districts may develop specialised clusters, attracting particular sectors of work, leisure or other activities that rely on geographical proximity for vitality and viability.

Such local centres will need to provide their own civic support systems with the expectation being that people will spend a greater proportion of their lives, whether working or at leisure, within their local area than they have in recent decades. To facilitate this, cities will need to meet a greater proportion of individuals' requirements within a short distance of their front door.

Of course people will still want to travel, and goods and services will keep flowing, but the proportion of time spent close to home, versus away, will change.

Critically, mixed use local centres need to be supported by a range of facilities and factors:

- **Generous, open, accessible, well-managed and adequately-resourced green spaces, where people have the right to exercise, relax, socialise, assemble and exercise free speech.** Such rights have been eroded ever since public land has been privatised, however such spaces of all sorts, whether large parks or small urban gardens, should be within close reach of everyone and form a key component of the walkable city.

  The management and funding of such spaces was discussed at length in 'Session B: Public and Private Land – Access and Use' (see section Collaborators) and it is recommended that new long-term arrangements under local control are developed and implemented to ensure they have a sustainable future. A community trust model as discussed above is one option, another is the removal of open spaces from the market for development in order to secure their future in perpetuity.

- **The greening of cities** is clearly closely aligned to the development of an effective and locally managed open space strategy, but the impetus is different, if just as essential – the need to maintain good air quality and improve environmental conditions. Nature-based solutions have been identified as the most effective way to improve and protect our health and environment, mitigate global heating and counter much of the damage already done to the planet.

  With greening comes the need to monitor the impact and benefits, to ensure that the duty on government and Local Authorities to provide a liveable environment is fulfilled. This involves recording and publishing standard and consistent metrics on, for example, air quality, temperature and humidity on the street, as well as finding more creative ways to assess and communicate the combined outcomes for high quality and amenable urban environment.

- **A comprehensive civic infrastructure** that supports social and support services; rentable spaces; logistic hubs; leisure and recreational venues; religious and cultural centres; a strong digital infrastructure and connectivity; transport nodes; a lively street culture; and an extensive array of housing options, catering for different households and capable of building neighbourhood and community cohesion.

  This is a simple ambition, but it will take a great deal of effort to achieve in a policy environment that (particularly through the current reform of use class orders) prioritises housing unit delivery above all else. Allied to this, town centre environments must be equipped to provide and protect mixed-economy functions, which often require very different rental levels and terms. At present this style of placemaking is being delivered by relatively few private forward-looking landlords, able to shape and realise a vision of a mixed community over a large estate.

  They do so in the knowledge that such a community will create a more successful and attractive proposition for long term finance than that of less imaginative competitors. Indeed, we were told in one session that footloose international finance is actively searching for more instances of one of the best-known examples of such a mixed approach – the Argent development in London's Kings Cross.

  The ecosystem of local centres and communities should ensure that the most positive aspects of city living are readily available and accessible within a short distance of home. This will spread greater levels of activity across cities, in turn leading to an even greater range of local provision. This has long been a planning goal outside cities in the creation of sustainable, self-sufficient communities, but the powerful premise of the 15-minute city is a vision for communities within the city itself.

- **City 2040 must accommodate the additional and potentially limitless digital dimensions of all aspects of life.** It must be an amalgamation of the physical and the digital realms, gaining advantages and benefits from both and the synergies between them.

  Clearly, it is critical that cities are well served with the most effective and fastest communications technology, but an online version of the city must partner the real one, providing and augmenting physical civic infrastructure and in part representing the city to the greater world. This will need to be done while maintaining the freedoms of the city from overly intrusive surveillance and monitoring. A significant attraction of city life is the ability to disappear into it, with opportunities for multiple lives and personal reinvention.

- **The physical infrastructure needs to support localised, cleaner and more equitable cities.** It will be necessary to continue to restrict the use of private transport inside city limits. A flexible, efficient, and low-emission public transport system, combined with increased cycling and walking, will take its place, based on connecting the multiple hubs in large conurbations rather than bringing everyone in and out of the centre. Transport should be viewed as a public service and considerable funding is required to ensure it is available and affordable to all.

  As with people, the movement of goods will need to be rethought. The logistics problem of the last mile needs to be overcome to avoid streets being dominated by vehicles constantly making deliveries. Logistic hubs will become an important feature of planning, both as places to re-sort and consolidate deliveries but also as places where packages can be collected. Such collection hubs could become an important focus for high streets as they expand into social, repair and training centres and become places for meeting and sharing.

- **The reconstruction of the local cannot be achieved without increased levels of civic and community engagement with place and local identity.** It needs discussion, debate and decision-making involvement on the part of those people who are already there. It requires planning strategies to be developed in collaboration with communities and not just consulted on. Trust will need to be nurtured through openness, listening, transparency and follow-through. The means for achieving this have been extensively promoted in the past, including the Farrell Review's proposal for Urban Rooms[65]. It is time they were implemented.

City 2040

The reformulated city of 2040, built upon existing patterns, buildings and infrastructure, represents a major opportunity for development but also a significant challenge to the planning regime. It will need to balance conflicting uses while maintaining green spaces, civic infrastructure and the potential for creativity. Against the great potential for growth, it needs to take a multi-faceted approach, understanding the city as a living, breathing entity, one able to offer exceptional opportunities for trade, interaction and mutual support.

City 2040 must be entrepreneurial: economically, socially and spatially, with a planning system that shows flexibility and imagination while protecting and maintaining the vital mix of communities and uses. It cannot favour one type of use over others, for example housing, but needs to keep them all in constant play and in balance. It needs to ensure accessibility to local facilities – ideally within a 15-minute walk. Its major challenge is going to be the transition to a net-zero carbon urban environment, still vibrant and exciting, but no longer all-consuming and destructive.

We heard there is a substantial willingness from the major players in the property sector (investors, developers, planners and designers) to reimagine and reinvigorate the UK's cities by 2040 and the model we've proposed has been warmly welcomed. We were also told that private sector funding is available given the right conditions, but at present the policies and national leadership have not yet facilitated the creation of successful mixed-economy multi-modal communities. A serious challenge exists around financing certain aspects of cities in the absence of an effective metric for gauging success beyond immediate financial returns, especially in measuring aspects that provide for the general good and add immense value to the commonwealth of the city. The next steps will be to prepare a programme and provide the evidence for a change in UK city governance and planning, drawing on best practice from the UK and the wider world to achieve this.

Next Steps

As originally envisaged by Taylor Wessing LLP, the Edge and University College of Estate Management (UCEM) this study is the first part of the City 2040 project, intended to look at the direction UK cities are taking. Moving forward, we need to address current initiatives, carry out research into a series of case study examples and examine the application and outcomes from existing planning policy before making recommendations for revised or new planning policy and guidelines aimed at delivering successful and thriving future UK cities.

The onslaught of Covid-19 as the project got underway has only intensified attention on how we live our lives. The subject of the future of cities has far greater importance, and the pandemic has created genuine expectations of urban renewal for each and every aspect of city life.

The project has developed to take this into account, but the fundamentals have remained in place. Change is underway, including the need to rapidly move to net-zero carbon city economies, but it is essential to prepare for it.

The following proposed work programme will be key to that effort:

- The collection and assessment of a series of case studies highlighting distributive city policies and initiatives.
- The development of a series of benchmarks/KPIs for successful mixed-economy and distributive cities, including performance indicators for the transition from the centralised to the distributed hub model.
- An assessment of a broad sample of key UK cities against agreed benchmarks/KPI criteria.
- A study on agglomeration effects for different sectors of the economy and the infrastructure systems they require to operate.
- Proposals and analysis of alternative transport networks for cities, in particular considering how to achieve successful co-ordinated multi-nodal systems.
- Assessments of options for environmental improvements to tackle key issues, including: air and water quality, flooding and other climate-related damage and overheating.
- Impact assessments of net-zero carbon propositions for UK cities.
- An assessment of current and potential planning and investment policies and regulations against the benchmarks/KPIs.
- Proposals for a new or revised framework of planning and governance policies for UK cities together with best practice guidelines for their implementation
- Understanding different funding models for connecting public and private finance.

This work could be undertaken in a range of different formats from an expert task group to an appropriately supported independent commission or citizen's jury drawn from a wide possible range of commercial and resident interests and backgrounds. Credibility will be key and it is suggested that the next stages should be carried out in as transparent and open a way as possible, especially when reaching conclusions and making recommendations.

The other big thing that sits on top of all this is the commitment to net-zero. Decarbonising an economy is a huge structural job, but a necessary one.

Prof Jim Coleman, Head of Economics, WSP

Long term investors like [Grainger Plc] need to think ahead to 2040. Air quality is considered as part of our investment process; where homes cannot be future-proofed against poor air quality, this prevents us from investing in those locations.

Helen Gordon, CEO, Grainger Plc

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Collaborators

We would like to thank the following expert participants who contributed to the City 2040 online evidence gathering sessions hosted by the Edge. (Note: job titles correct at time of writing).

Session A: Equity and Exchange (17 November 2020)

How will sharing and exchange evolve in the post-industrial and post-high street city?

Chair:

Professor Peter Bishop
Professor in Urban Design, The Bartlett School of Architecture, UCL

Speakers:

Professor Jim Coleman
Head of Economics, WSP

Leo Boscherini
Co-Founder & CEO, We Built This City

Tina Paillet FRICS
Chair, RICS Europe

Max Dewhurst
Activist and Cycle Courier

Emma Cariaga
Joint Head of Canada Water, British Land

Session B: Public and Private Land: Access and Use (24 November 2020)

As privatisation of public land increases, how can civic urban spaces evolve to ensure their survival?

Chair:

Stephen Edwards
Director of Policy & Communications, Living Streets

Speakers:

Peter Neal
Director, Peter Neal Consulting

Helen Griffiths
Chief Executive, Fields in Trust

Claudia Carter
Associate Professor and Reader in Environmental Governance, Birmingham City University

Professor Thomas Perroud
Professor of Public Law, Université Paris II, Panthéon-Assas

Finn Williams
CEO, Public Practice

Session C: Clustering and proximity

(1 December 2020)

Is the ideal of the dense, social, mixed-use and walkable city still fit for the future?

Chair:

Patricia Brown Hon FRIBA
Director, Central

Speakers:

Charles Landry
Founder, Comedia and Author, The Creative City

Jamie Ratcliff
Executive Director, Network Homes

Selina Mason
Director of Masterplanning, Lendlease

Ronald Nyakairu
Senior Manager, Insight and Analytics, Local Data Company

Session D: The impact of clean air

(8 December 2020)

Is Clean Air the goal, or are we missing the broader benefits it triggers for society?

Chair:

Erin Walsh
Director of Built Environment, Connected Places Catapult

Speakers:

Nick Grayson
Green City Manager, Birmingham City Council

Dr Emma Ferranti
Environmental Change Research Fellow, University of Birmingham

Sophie Shell
Deputy Coordinator, Grow Green, Manchester City Council

Helen Grimshaw
Senior Consultant, Sustainability, URBED

David Sim
Partner and Creative Director, Gehl

Session E: The Future City of 2040 (16 February 2021)

Can a review of the key emerging ideas and current urban planning trends, identify a path ahead for citymakers?

Chair:	**Joanna Averley** Chief Planner, MHCLG
Speakers:	**Professor Peter Bishop** Professor in Urban Design, The Bartlett School of Architecture, UCL
	Professor Thomas Perroud Professor of Public Law, Université Paris II, Panthéon-Assas
	Esther Kurland Director, Urban Design London
	Simon Birkett Director, Clean Air in London

Roundtable: The Economics of the 2040 City (25 March 2021)

Do we need a new commercial perspective and understanding of capital value across our nation's city spaces so that they are first; fundable and secondly; financially sustainable?

Chair:	**Erin Walsh,** Director of Built Environment, Connected Places Catapult
Panellists:	**Helen Gordon –** CEO, Grainger
	Mark Allan – CEO, Landsec
	Ann Zhang – Chair, National Infrastructure Commission Young Professionals Panel (NIC YPP) and Economist at PA Consulting
	Professor Yolande Barnes – Chair, Bartlett Real Estate Institute, UCL
	Professor Danny Dorling – Halford Mackinder Professor of Geography, University of Oxford
	Ian Marcus, OBE – Senior Advisor, Eastdil Secured and President, Cambridge University Land Society (CULS)
	Simon Foxell – Principal, The Architects Practice and Coordinator of the Edge
Audience:	**Professor Jim Coleman,** Head of Economics, WSP
	Nicky Gavron, Former Deputy Mayor of London, The London Assembly, London; Sustainable Development Commissioner
	Robin Nicholson CBE, Fellow, Cullinan Studio
	David Sim, Partner and Creative Director, Gehl
	Selina Mason, Director of Masterplanning, Lendlease
	Keith Clarke CBE, Chair, Constructionarium and Chair, Active Building Centre
	Eleanor Fawcett, Head of Design, Old Oak Park Royal Development Corporation (OPDC)

We would also like to thank the hundreds of built environment professionals, policymakers and citizens who attended the 2020/2021 online debates hosted by the Edge who have contributed their expert insights to the discussion.

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