





FUTURE PLACES

SCENARIO PLANNING FOR THE FUTURE OF THE UK'S TOWNS AND CITIES

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EXECUTIVE SUMMARY

Potential actions place leaders can take to help shape the future of UK towns and cities.

Innovate UK's Urban Systems team aim to create the business environment needed for innovative solutions to be developed and deployed, in order to address the complex challenges facing urban places. These challenges span all interconnecting systems of environment and services that define our unique places.

Innovate UK commissioned a strategic foresight programme from Urban Foresight to explore the potential futures of UK places, and build an understanding of how to create innovation opportunities for these futures.

Foresight tools are a set of exploratory and analysis frameworks that are participatory, creative and action-orientated. This foresight activity has used:

- 1. **Horizon scanning** to create a list of future drivers of change on UK towns and cities.
- 2. Scenario planning to create best case narratives for the future of different UK urban systems with high potential for innovation.
- **3. Backcasting** to identify the actions that the UK's place leaders can take to create the opportunities for innovation that will deliver positive futures for places.

The horizon scan produced a list of over 300 trends affecting the future UK towns and cities. These can be found in the <u>Future Places Horizon Scan report</u> and they are also available to explore in an interactive online tool at <u>www.placekits.com/futureplaces</u>.

A proprietary classification framework was created to ground this foresight process in the unique characteristics of the UK's different towns and cities. It categorised them by their attributes and characteristics, not by their size or official designations.

Four visions for the future were created through a co-creation workshop. This workshop was held with place stakeholders from across the UK, with representation from the public and private sectors alongside academic research.

The subject areas for the visions were identified as areas with a high potential for innovation based on the place classification framework and the themes of the horizon scan's future trends.

A VISION FOR THE FUTURE OF MOBILITY →

A VISION FOR THE FUTURE OF RESILIENCE →

A VISION FOR THE FUTURE OF REGENERATION →

A VISION FOR THE FUTURE OF HOUSING →

"A car is no longer the first choice for most journeys."

Public transport offers passengers more comfort and convenience with integrated multi-modal and active travel transport hubs in suburbs. Data on travel patterns and community engagement informs network design, planning criteria, and infrastructure investments.

"Cities are producers as well as consumers."

Urban systems, including food, energy and water, are regenerative. They are enabled by resilient infrastructure that is mostly community-owned. Shared, accessible data informs the design of these systems and they are able to proactively react to disruptive climate events through digital monitoring and prediction tools.

"Regulation creates thriving business environments."

Top-down legislation encourages and incentivises drastic changes to high street use and business investment in industrial places. Retail centres become more mixed use, with public and community services drawing people back into them. Businesses invest in clean, green technologies that use digital tools and offer optimised solutions.

"Everyone can afford housing."

Top-down legislation encourages and incentivises drastic changes to high street use and business investment in industrial places. Retail centres become more mixed use, with public and community services drawing people back into them. Businesses invest in clean, green technologies that use digital tools and offer optimised solutions. This work helped to identify how Innovate UK and other leading bodies in the UK can create these ideal futures through their actions.

Policies, research programmes, innovation support frameworks, and investments will all support the incremental development of the UK's places towards a green, equitable future.

This foresight programme found that there were three common enablers of place-based innovation in the UK.

→ Data

The future of urban systems depends on the effective collection, sharing, and use of data on their performance.

→ Community engagement

Towns and cities must be developed with the community that live, work and visit them.

→ Place-led experimentation

Solutions to challenges need to be defined by the specific needs of the place, rather than pushed by a technology capability.

Place leaders and solution providers can progress all these themes in three ways:

1/ Inspire:

share knowledge between actors, building a shared understanding of the challenges and opportunities that innovation can address.

2/ Involve:

encourage collaboration between actors, increasing the potential for the development of successful partnerships.

3/ Invest:

finance programmes that enable the introduction of new technologies and the innovative application of existing technologies.

SYNTHESISING FUTURE TRENDS

Strategic foresight is the practice of systematically exploring potential futures, analysing them, and creating actions that are resilient to them.

Innovate UK's Urban Systems team aim to create the business environment needed for innovative solutions to be developed and deployed, in order to address the complex challenges facing urban places. These challenges span all interconnecting systems of environment and services that define our unique places. However, it is a daunting challenge to process all possible futures facing all places in the UK, especially whilst aiming to consider the qualities of individual places.

Urban Foresight have designed and completed a strategic foresight activity that took a systematic approach to exploring and preparing for the future of places. The approach had four key characteristics that define it as a foresight activity which considers a future we can create or shape, rather than a future already decided¹:

1. Action-oriented

Analysing and discussing future developments in a way that supports actors to shape them. Rather than simply exploring possible futures, it links them to the possible actions to create them.

2. Open-to-alternative futures

Assuming that the future is not pre-determined and can evolve in different directions, shaped by the current actions of stakeholders and the decisions taken today.

3. Participatory

Involving a number of different stakeholders concerned with the system under study.

4. Multi-disciplinary

Accounting for all perspectives on the problems faced – all variables are considered, regardless of their dimension.

It was completed in two parts: a horizon scan activity that produced a resource for exploring potential futures, and a scenario planning activity. The latter produced actionable recommendations for Innovate UK and other UK place leaders to enable innovation that creates towns and cities with thriving economies, populations, and environments.

SYNTHESISING FUTURE TRENDS

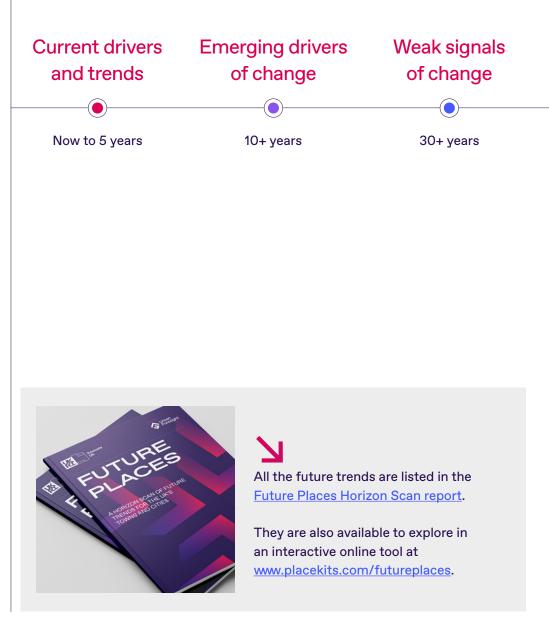
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Exploring the future

A horizon scan activity was completed to create an initial list of future trends. A literature review, interview series and media scan were used to create this list of trends – defined as anything driving change – across a defined domain of urban systems.

"A trend is defined as anything driving change."

These trends were categorised against a VESTEG framework that defines whether they influence values, economic conditions, sociodemographic make up, technologies, the environment, or governance. They were also defined against their time horizon of:



The final database of nearly 300 trends produced seven overarching themes that will affect the future of towns and cities in the UK.

Seven themes affecting innovation for UK towns and cities.

Regulations and innovation

Standards and regulations will influence the growth rate of innovative markets. Technology developments are held back or technology threats are accelerated by restrictions or gaps in regulations that affect innovators, local governments, and end users.

Network patterns

Established relationships between citizens, the state, markets, infrastructure, and the built environment will change form. Networks change shape as expectations, power dynamics, competition, and social contracts all shift.

Safety and security

An appetite for safety will drive investments in secure systems. Physical infrastructure and digital technologies can't present a risk to individuals and must be able to withstand bad actors.

Investing in healthy futures

Investment decisions will account for their impact on health outcomes. An ageing population draws focus to preventative healthcare, longevity and co-benefits.

Computing power

The accelerating speed of computers will allow for more powerful programmes. Quantum computing and generative AI provide opportunities for automation of smart, data-driven infrastructure and systems that create their own value.

Sharing spaces

Digital and physical spaces will be accessible to everyone in an ageing population. From the built environment to online services, everything needs to cater to a multigenerational, multicultural population with diverse needs.

Resilient systems

Environmental and civic systems will support a growing population day-to-day and under extreme events. Water, food, mobility and energy infrastructure must provide for everyone, withstanding extreme weather events or other "black swan" unforeseen events.



In the second phase of this approach, focus was turned from the possible futures to how to react to them. This approach took a deliberately place-based approach, grounding recommendations for the future in the nuances and characteristics of UK places.

A proprietary categorisation framework for UK towns and cities was created specifically for this study. It provides a detailed description of seven types of towns and cities breaking away from conventional categorisation attributes – like the size of a place's population, economy, or geographical footprint – to account for attributes that are more relevant to its innovation environment.

As this methodology is rooted in participation and co-creation, a high-profile workshop was hosted in central London to engage any stakeholder or interested individual in shaping the plans for creating innovative futures in these place categories.

Attendees were from a wide range of national, local, and regional public authorities, national agencies, private businesses, and the research and education sectors.







The workshop introduced this group to the findings of the horizon scan and the place categorisation. They then stepped through a series of group and individual exercises to create:

→ A ranking of the future trend themes for each place categorisation Identifying where future trends will have the most influence on the challenges that different types of places around the UK are facing.

→ A heat map of the innovation potential in each place Ranking the potential for innovative solutions aligned to future trend themes in each type of place.

→ Scenarios for the future

Illustrating the best case future in the four areas that have the highest potential for innovation in UK places.

→ Recommendations for place leaders

Stating the areas that place leaders should focus on that will create the innovation environments to deliver these ideal futures.

The workshop used scenario planning, a strategic foresight methodology for developing visions for the future to guide decision making in a structured manner.



The results of this phase are all captured in this document, which is designed as both a reflective resource enabling personal consideration of the future, and as a recommended course of action for place leaders. \checkmark

CLASSIFYING UK PLACES

Different innovations are needed for different places, in order to create thriving towns and cities in the UK where anyone can work and live.

Towns and cities in the UK are diverse in their geography, history, demographics and socioeconomics. They face a broad range of pressures on their land use, service delivery, and business environment.

Innovate UK and the UK Government aim to grow solutions that alleviate these pressures and create opportunities. To be successful in doing so, these innovations must account for the unique aspects of each place's economy and population.

Classification framework

The classification tool presented here will enable innovation support actions that meet the needs of a wide range of places across the UK, and are developed with consideration for their specific characters.

Within this framework, there is no distinction made between towns and cities – instead the general term 'place' is used. This recognises that the conferring of city status on a town has only a limited correlation with its size, influence, challenges, and potential for innovation.

It also avoids the confusion which can arise around the classification of towns which are larger than many cities (Reading, Northampton, Luton etc.) and vice versa (St Davids, St Asaph, Wells).

A review of existing classification tools was conducted to understand the kind of attributes that are commonly used for constructing place typologies. These were combined with the attributes identified by stakeholders during the horizon scan as being of interest in the future.

The result was a list of 10 attributes that can be used to categorise a town or city, and which can be measured using a combination of quantitative indicators and qualitative factors.

- 1. Geography Rural/urban, climate, urban greenery
- **2. Health** Life expectancy, health profiles, morbidity rates
- **3. Demographics** Population size, crime rates, education
- **4.** Mobility Car use, rail passengers, active travel
- **5.** Physical infrastructure Utilities, road network, district heating
- 6. Digital infrastructure Broadband speed, availability of open data
- 7. Economy Wages, house prices, unemployment
- 8. Footprint Commuting, retail footprint, tourist numbers
- 9. Sustainability & resilience Emissions, air quality
- **10. Amenities** Stadiums, parks, leisure facilities

Place profiles

The grouping of these attributes for UK towns and cities created a framework of 7 categories of places.

In these profiles, descriptions of each place type is provided, alongside examples of UK places which match the description, and a ranking of the future themes based on their potential impact on each individual type of place.

The rankings are relative and do not include a sense of scale. A trend ranked as "lower" for a place category may still be particularly impactful on it, but relatively less impactful as those ranked "higher".

PLACE PROFILES → 1/ GLOBAL PLACES

These are places with large populations, good transport links, a financial centre and significant international reach.

They are heavily urban with a young and multicultural population that is highly economically active. Infrastructure is comprehensive – both physical and digital – with mature coverage of utilities and network connectivity. There is a major airport, and perhaps a subway, tram or light rail system.

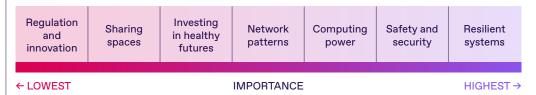
Residents and visitors benefit from large stadiums and many leisure spaces – resulting in a large economic footprint that includes significant influxes of tourists and also commuters.

However, these places face challenges rooted in their intrinsic density. They are expensive to live in, consume large amounts of energy, have poor air quality, and significant disparities in population health.

→ Examples: London, Birmingham and Edinburgh

In the future

The themes that will be the most important to the economic, environmental and social future of the UK's global places:



- Increasingly frequent extreme weather events will affect the performance of the built environment and requires innovative, resilient systems. Investment into reducing the carbon impact of large urban areas is also required, which will support a cleaner local environment with less air and noise pollution.
- 2. Infrastructure must also adapt to provide **safety and security** to residents and visitors in light of growing global instability and national security concerns.
- 3. Improved **computing power** offers solutions for smart buildings and infrastructure development, including in surveillance and energy performance.

PLACE PROFILES → 2/ INDUSTRIAL PLACES

The economy of industrial places is often heavily reliant on a single type of industry. They may have a cluster of factories or a major business park which is a dominant source of employment.

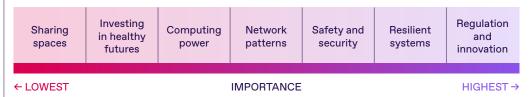
They could be located near significant natural resources which support industry – such as a coal seam or a major river. They don't necessarily have a large population but will have good infrastructure for the relevant industry, such as a developed power network or a major port for goods transportation.

These places often face challenges related to pollution, poor population health and a lack of amenities for locals. There may be a significant commuter inflow, but there is unlikely to be much tourism or other opportunities, and high dependency on a single industry could be damaging to the future of the place.

→ Examples: Portsmouth, Coventry and Port Talbot

In the future

The themes that will be the most important to the economic, environmental and social future of the UK's industrial places:



- 1. **Regulatory innovations** could ensure these places are developed with a green, clean future in mind and are at the cutting edge of new technologies, becoming leaders in new industries.
- 2. Developing **resilient systems** will ensure that industrial places continue to thrive under the changing environmental and regulatory landscape.
- **3**. Cybersecurity and defence of intellectual property will become an even more significant component of the **safety and security** of industry going forward.

PLACE PROFILES →

3/ POST-INDUSTRIAL PLACES

Post-industrial places are former centres of industry, often forming a semi-urban network with other nearby places in a similar position.

They may have significant health challenges and higher rates of crime than the general population, which can be an impact of lower employment and education rates. Lack of digital skills and infrastructure means that data is not being effectively collected and used by the place.

The public transport network is often lacking, with most people relying on private cars. This can lead to poor air quality – compounding existing health issues.

However, there is often a strong sense of community and the social fabric of the place is supported by religious organisations and sports clubs. The rise in remote working opportunities could prevent future 'brain drain' to global places.

→ Examples: Dundee, Lisburn and Wakefield

In the future

The themes that will be the most important to the economic, environmental and social future of the UK's post-industrial places:



- 1. The **network patterns** of the mobility infrastructures that define post-industrial places as car-dominated will need to change to reduce the carbon emissions of the UK.
- 2. **Regulation and innovation** will have a major impact on post-industrial places, hopefully leading to opportunities for businesses which can manoeuvre to exploit new markets and remote workers.
- 3. The move towards digitalisation could bring a new wave of digitally-enabled business and remote working to post-industrial places, requiring substantial **computing power** and infrastructure.

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CLASSIFYING UK PLACES

PLACE PROFILES → 4/ ACADEMIC PLACES

These are highly-innovative centres of research and education that are dominated by a university or academic-focused research institute.

They have a younger, healthier population and will often experience seasonal flows of students and tourists. There are many recreational opportunities available: good sports facilities and a healthy nighttime economy.

Academic places are often an urban pocket in an otherwise rural area and will have good transport infrastructure, with higher levels of active travel.

The impact of a university on housing availability and management of the relationship between temporary students and permanent residents can be a challenge for academic places.

→ Examples: Keele, Warwick and St Andrews

In the future

The themes that will be the most important to the economic, environmental and social future of the UK's academic places:



- The economic strength of these places relies on their capability to conduct research and exploit their findings. The UK's regulation and innovation environment is ideally designed to encourage investment in research, and this needs to continue into the future.
- 2. Start-ups, spin-outs and research institutes which are fostered by academic places require significant **computing power** to conduct cutting-edge research and develop innovative products.
- 3. There must be equality for students and local citizens in the creation of **shared spaces**. Students need accommodation and academics need spaces for research and collaboration, placing increasing pressure on the space available for the local community.

PLACE PROFILES → 5/ COMMUTER PLACES

Commuter places will have lots of housing and good connectivity to a nearby global or industrial place, but may have few amenities in their own right.

They will often form part of an urban commuter belt, or may be in a rural environment if connected by a major transport link such as a high-speed train line.

There will be a large working-age population which may be healthier than in a global or industrial place – due to less pollution.

The challenges for these places stems from the large commuter outflow, which means that there is less of a sense of community, fewer local shops or restaurants, and higher house prices than nearby places.

→ Examples: Reading, Morpeth and Stockport

In the future

The themes that will be the most important to the economic, environmental and social future of the UK's commuter places:



- Due to the large volume of commuters, there is significant scope for innovation around **network patterns**. The continued rise of remote and hybrid working will have a major impact on the employment opportunities and housing prices in these commuter places.
- 2. The creation of **sharing spaces** is needed as patterns of work change and a sense of community needs to be fostered between the transient workforce and local workforce.
- 3. **Regulation and innovation** will be required to cater to all the needs of increasingly diverse and evolving commuter towns and to improve the provision of amenities.

PLACE PROFILES → 6/ TOURIST PLACES

These places are often situated near the coast, National Parks, or other areas of natural beauty. The local climate, history, or amenities draw in a significant number of visitors relative to their size.

The local population is often small, and transport connections need to cope with the influx of visitors during peak periods. There is significant provision of amenities, such as independent shops, cafes and arcades.

Digital infrastructure – such as public Wi-Fi and footfall counters – may be employed to understand tourist flows and monitor the health of the high street.

Large visitor numbers can have a detrimental impact, however, as they encourage overreliance on the tourism industry and the ubiquity of second homes makes housing less affordable for those working locally.

Outside of the tourist season, many of these places struggle to thrive and the population's health and employment opportunities are impacted.

→ Examples: Portrush, Newquay and Keswick

In the future

The themes that will be the most important to the economic, environmental and social future of the UK's tourist places:

Computing power	Regulation and innovation	Investing in healthy futures	Resilient systems	Network patterns	Safety and security	Sharing spaces
← LOWEST IMPORTANCE H						HIGHEST →

- Shared spaces must balance the needs of both visitors and residents innovations in the built environment and provision of recreational spaces can help to deliver this.
- 2. Physical **safety and security** is important for the reputation of a tourist place. Development of infrastructure and digital tools which have the potential to improve the safety of the place will encourage more tourists to visit.
- 3. The **network patterns** of transport and other services must be able to respond to seasonal patterns of tourists and locals, catering to all users and include provision for less accessible places.

PLACE PROFILES → 7/ MARKET PLACES

These are smaller, often isolated, rural places where the high street is the commercial and social focus and the main industry of the surrounding region is agriculture.

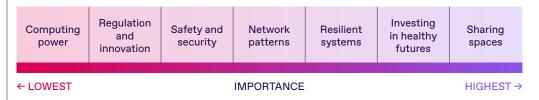
These places have direct links to the natural environment and, as such, opportunities for the population to be active. The place could act as a hub for a large rural catchment area, with people travelling in for socialising and retail opportunities.

The challenges to innovation in these places come from an older population, poor digital and utilities infrastructure, and a lack of employment opportunities. An isolated population can also result in poor medical access and increased incidence of mental health issues.

→ Examples: Hexham, Buckingham and Ludlow

In the future

The themes that will be the most important to the economic, environmental and social future of the UK's market places:



- The existence of market places as a hub for social and commercial congregation will continue and therefore there is a need for future-ready shared spaces that can be used by people and organisations to exchange goods, services, and ideas.
- 2. There must be significant **investment in the healthy futures** of these places both in terms of nutritious food production and access to support for mental and physical health.
- **3.** The necessity of sustainable agriculture in the future means that the development of climate **resilient systems** of farming will be a priority. Soil regeneration and reduction of chemical use are examples of measures that will need to be explored.

INNOVATION POTENTIAL

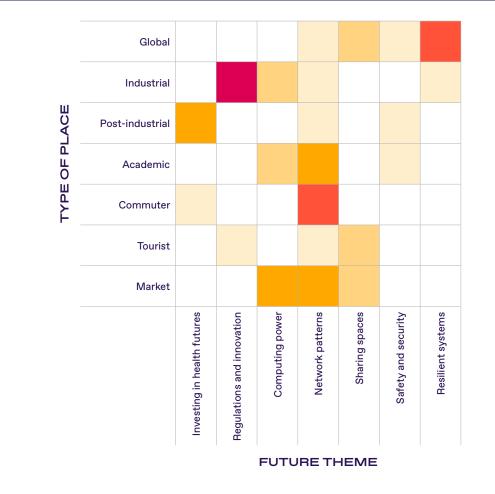
The challenges or opportunities faced by UK places present opportunities for innovative products, processes and services.

This potential is different for different places. For example, the unique characteristics of a large global city with an agglomerated economy may offer significant scope for a fiscal innovation that just would not work in a town with a much lower population and dispersed economy.

The scale for this potential can be thought of in multiple dimensions. In this activity, it was framed as being either:

- 1. The impact of the challenge it addresses.
- 2. The benefits of the opportunity it creates.
- 3. The UK's competitive advantage in this area.
- 4. The scale of the potential market.

Together with a broad group of place stakeholders, the potential for innovation was rated by theme and place classification. The resulting heat map illustrates areas of focus for enabling significant place-based innovation in the UK. \downarrow



A heat map of the potential for innovation posed by different future themes in types of UK towns and cities.

Four areas were chosen as hot spots on this map with high potential for innovation in UK places. Some were identified by aggregating the scores of different places with similar challenges or opportunities.

A co-created list of areas with high potential for future innovation in the UK

- 1. Network patterns in academic, market and commuter places
- 2. Resilient systems in global places
- 3. Regulations and innovation in industrial places
- 4. Sharing spaces in tourist, market and global places

VISIONS FOR THE FUTURE

Scenario planning creates illustrative visions for the future that inform actions for creating desirable outcomes.

The four areas of high innovation potential were translated into future scenarios. A vision, timeline and enabling actions were then produced for each of these scenarios. These narratives then include the activities, decisions and milestones that place leaders and organisations like Innovate UK, could consider in order to develop thriving, sustainable places.

The four areas created visions on the future of:



These scenarios are valuable tools for reflecting on the range of actions that agencies, authorities and innovators need to take to achieve their place-based policy aims.

A VISION FOR THE FUTURE OF MOBILITY \rightarrow

A CAR IS NO LONGER THE FIRST CHOICE FOR PERSONAL JOURNEYS

 \rightarrow By 2045, public transport is accessible to everyone thanks to improvements in its coverage, pricing, safety, and accessibility. Journeys are peoplecentred and multimodal, as different systems are integrated and it is straightforward to switch between them. Public transport is timely and convenient enough that the car is no longer an obvious first choice for personal journeys.



At first, changes to public transport systems are based on comfort and convenience. Services like e-tickets and on board wi-fi help to encourage commuters and other passengers back on to bus and train services after the pandemic as part of multi-modal, active travel journeys. Changing working patterns motivate these changes, and also encourage accessibility and safety improvements including bathrooms and security personnel.

In five to ten years, investments begin to improve infrastructure, particularly interchanges and multimodal hubs to encourage active travel in satellite places like the suburbs which have been traditionally limited to only car use. These investments are pulled by new, growing markets and models for e-mobility, shared mobility and integrated transport networks.

Their business cases are supported by surveys and community engagement that explores how people want to travel in an ideal future, not how they currently travel based on what infrastructure is available to them.

These infrastructure investments become targeted at places with no previous links to cities as part of a national policy for multimodal journeys. To complement this, skills programmes are created to develop a talent pool of transport planners, designers, and workers.

In ten years, planning criteria are introduced that discourage the development of new housing or workplaces in areas without intermodal connectivity, and to prevent the overuse of existing transport systems. This change is supported by capabilities in modelling network patterns in logistics and peoples' movements, which itself is reliant on the wealth of data available on travel patterns from digital connectivity. \downarrow

A VISION FOR THE FUTURE OF RESILIENCE \rightarrow

CITIES ARE PRODUCERS AS WELL AS CONSUMERS

 \rightarrow By 2050, all the basic needs of residents within large UK cities are met in the local area. Conceptually, the city is regarded as a producer as well as a consumer. Its energy, water, and food systems are regenerative, and more infrastructure is shared or community-owned, supporting a more equitable distribution of wealth in our largest cities.



In the next five years, devolution and levelling-up policies support city-level changes. Digital technologies and community-led decision making are adopted by governing authorities to inform the design of local infrastructure that meets the needs of people working, living and travelling to these cities.

A catalyst for change is an accessible source of real-time data on the urban systems, including their use, demand, and performance. A better data infrastructure is introduced that makes urban data centralised and accessible.

Leaders adopt systems-thinking and foresight for policy making processes. They understand the future trends of population migration, the ageing population, and the climate crisis.

The need for urban system resilience is highlighted to leaders, including renewable energy sources, urban or vertical farming, micro- and shared mobility solutions, district heat and energy networks, and a climate change-resilient built environment.

In five years' time, changes to procurement protocols and planning regulations now support innovation and investment in resilient, shared infrastructure. This includes connectivity infrastructure, which in turn grows the data available, supports proactive reactions to extreme weather events, and enables the diagnostics and self-monitoring of the new systems.

By 30 years' time, urban systems are fully regenerative. They take full advantage of immersive computing and digital twin technology, enabling complex energy generation and storage systems to be run in a city centre. Food and energy is accessible and affordable to all in these urban areas.

A VISION FOR THE FUTURE OF REGENERATION → **REGULATION CREATES THRIVING BUSINESS ENVIRONMENTS**

 \rightarrow By 2035, the UK's industrial towns and cities are thriving. They have a cutting-edge business environment that creates prosperity and wellbeing for all, with leisure time and disposable income available to all generations. Regulation has encouraged strategic investments that enable the managed transition away from heavy industry and towards a digitally-enabled and environmentally-friendly future.



In the next two years, a shift in legislation and regulation approaches makes industrial places more proactive to innovative technologies and place-based regeneration. Government policies incentivise equitable, green industrial R&D, skills and training for new technologies like renewable energy solutions are rolled out, and local authorities make big levelling up investments and changes to their high streets.

Previously struggling, historic retail centres are regenerated by relocating communityfacing public services like medical, dental, police, justice, and council services to them. This increases footfall, encourages retail and hospitality business investment, and boosts public transport usage.

By 5 years, more top-down regulations on energy are introduced. These require the widespread use of clean energy for industry and R&D. The transport network undergoes a wholesale redesign and investment programme, which improves connectivity to these places and continues to bring people back into the retail centres.

Local authorities are encouraged and empowered to repurpose their high streets in novel or creative ways, like building new public service hubs or undertaking developments that encourage investment from other sectors, including businesses, education bodies, or charities.

Authorities have the funding for programmes that combat the "brain drain" and help to maintain youth populations. These young people see job opportunities through the growing clean, digital sector that is replacing heavy industry.

By 10 years' time, these industrial places have transitioned into different types places, with a thriving technology and R&D business community, supported by the fabric of a productive high street and a healthy, engaged and diverse population.

A VISION FOR THE FUTURE OF HOUSING → EVERYONE CAN AFFORD HOUSING

 \rightarrow In 2050, everyone can afford housing. Even in tourist destinations and large global cities, there is enough housing for everyone and communities grow. Data and regulations enable building and retrofitting, so that all generations can access a type of housing that suits their needs at an accessible price. With access to housing resolved, other socioeconomic, health and wellbeing problems are more easily overcome.



In the near term, tools are established to address immediate housing crisis hot spots. A single, central and accessible database of land ownership is introduced so local authorities and developers are able to identify potential sites for new housing. Planning regulations encourage mixed use developments and investment in services.

From a softer perspective, investments are made in developing a robust sense of community in places with a transient population. Digital, immersive reality tools are used to promote and encourage engagement in the local history of a place.

In three years' time, communities can access cultural hubs, art studios, and other spaces for developing relationships in their local area. Data on land and property ownership is available to local groups to organise themselves and create co-housing schemes, with private developers having been convinced of the value of open data.

Regulation has followed in the footsteps of successful pilots, and now local authorities have more powers to build housing. They can use planning to repurpose buildings, create lots of different types of housing (flat, multi-generational, co-living) in previously-designated commercial or industrial spaces, and open their place-based data up for scrutiny. This attracts investors and community groups alike.

Ten years into the future and the housing landscape has changed. Family units are more multi-generational, and property is no longer seen as an investment but as a personal right – aided by legislation. Financial models have innovated to reflect this and lots of housing is public, co-owned or community-owned.

Citizens are emotionally attached to where they live, and the definition of a place is intrinsically connected to its community. Whilst digital and data tools including digital twins and immersive reality continue to drive a diversity of viewpoints in planning.

CREATING THE FUTURE

There are actions which Innovate UK and other leading bodies in the UK could explore in order to create these ideal futures.

Policies, research programmes, innovation support frameworks, and investments will all support the incremental development of the UK's places towards a green, equitable future.

The research into the future and design of ideal future scenarios in this foresight activity have informed a series of recommendations. These focus on the specific actions or mindsets that stakeholders in UK places can take to create positive futures.

They have been grouped under the three headings of the type of action that these leaders – such as Innovate UK, governing and local authorities, regulators, research councils, infrastructure operators, developers, and businesses supplying places – can take to innovate:

- 1. **Inspire:** share knowledge between actors, building a shared understanding of the challenges and opportunities that innovation can address.
- 2. **Involve:** encourage collaboration between actors, increasing the potential for the development of successful partnerships.
- **3. Invest:** finance programmes that enable the introduction of new technologies and the innovative application of existing technologies.

These recommendations all fall under three common enablers for place-based innovation in the UK.



Data

The future of urban systems depends on the effective collection, sharing, and use of data on their performance.

The efficient design and management of energy, transport, water, and food networks is enabled through data modelling. Into the future, systems will be cyber-physical and large, powerful programmes will manage smart infrastructure.

Urban areas are constrained by the physical space that they occupy. The economic benefits of agglomeration encourage density, and the future trends identified in this research indicate a future of mixed-use buildings, public realm and green spaces. Place-based data will need to be accurate and reliable to enable this.

Place leaders can take the following actions to use data to create a positive future for UK places:

INSPIRE	 → Work with sector bodies to create and promote the data standards needed for place-based innovation. → Run events that share best practice in digital innovation between authorities and innovators, such as roadshows and showcases.
INVOLVE	 → Collate data on a national level for high-priority innovation areas through collaboration programmes with existing sector leaders. → Engage with the planning system and regulators on their future strategy for data sharing. Share the results of this foresight work and visions for the future. Build connections between planning, regulators and innovators.
INVEST	 → Invest in open or shared data architectures in high-priority areas, including high street footfall, place-based data on land use and ownership, and mobility network data. → Fund programmes for centralising service delivery data assets.

Community engagement

Towns and cities must be developed with the communities that live, work and visit there.

In each of the visions for the future explored, the specific needs of communities were highlighted as a key input to the design and introduction of innovative solutions. Whether these are permanent residents, transient groups, or visitors does not change the value of their insight into a place and its services. However, the weight placed on local communities' opinions must be higher to reflect their deep connections with the area they call home.

Top-down interventions in regulations and financial structures can encourage the growth of innovative markets, but bottom-up specifications ensure that they meet the needs of the population.

Place leaders can take the following actions to use community engagement to create a positive future for UK places:

INSPIRE	 → Create guidelines for community engagement in the different types of UK places and their different populations. → Share the outcomes of community engagement activities on urban systems, including housing and mobility network engagements. → Create guidelines for the design of inclusive urban solutions, such as dementia-friendly public spaces.
INVOLVE	 → Encourage "twinning" of places, their residents and business communities. → Engage with researchers and specialists in service design to learn from their best practice.
INVEST	 → Build community engagement activities into specifications for innovation funds. → Fund projects that create open sources of information on community needs and sentiments.

Place-led experimentation

Solutions to challenges need to be defined by the specific needs of the place, rather than pushed by a technology capability.

This will enable the deployment of infrastructure and services that integrate with the unique make-up of a place, accounting for the diversity and heritage of different places within the UK.

To be proactive in finding and proving the value of an innovative solution, places need to be able to:

- \rightarrow understand the pressures that are facing them in the future,
- \rightarrow and then experiment with new solutions.

Leaders in place-based innovation need to build and support a culture of foresight and experimentation that places the local area, its infrastructure, residents, businesses and visitors at its heart.

Place leaders can take the following actions to use place-led experimentation to create a positive future for UK places:

INSPIRE	 → Share best practice in place-based systems thinking and proactive, foresight-based approaches to upskill policy makers and local leaders. → Share best practice case studies on future-focussed technology deployments. → Create frameworks or pathways for private sector involvement in service delivery to encourage innovative set ups and reduce barriers to introducing them.
INVOLVE	 → Engage with places on their specific needs, building an understanding of the unique barriers to innovation in each type and geography of place. → Use place-based approaches to innovation programmes or events to harness cross-sectoral learning between innovators.
INVEST	 → Explore the opportunity for developing future high streets or urban living labs that are able to explore and experiment with innovative solutions. → Collaborate with specialist bodies to create challenges for innovative solutions. For example, working with conservation bodies on challenges that support heritage-based regeneration and mixed use spaces.

FUTURE FOCUSSED

Strategic foresight encourages its participants to envisage the future as something that they can shape.

The actions innovators take today will determine how prepared UK places are for new challenges and opportunities.

This programme has created a wealth of information to support this, including:

- \rightarrow A database of future trends that will impact on UK towns and cities.
- → Visions for ideal long term futures that are shaped by innovative actions in the immediate future.

By reflecting on these, place leaders will be inspired to shape towns and cities that are equitable, that protect the environment, and that grow thriving economies. They should use data, focus on community engagement, and encourage place-led experimentation to do so.

These recommendations will contribute to UK places having the capacity, culture and business environment for innovators to thrive.



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