

Q4

Spring 2018 edition

CATAPULT
Future Cities

CITY INNOVATION BRIEF



Digest

Key developments in Advanced Urban Services and urban innovation in the UK this quarter



Activity Tracker

Advanced Urban Services related Funding and tender opportunities this quarter

Focus on:

Digital planning
Planning for outcomes

FOREWORD

The decisions we make today shape our future - no more so perhaps than in the built environment. From the winding pedestrian Lanes of Brighton, conceived by people who never imagined the need to make space for 'horseless carriages', to the planners behind the likes of Swindon and Milton Keynes, who could think of little else, planning officers are making decisions about tomorrow based largely on today's ideas.

As an experienced local authority chief executive, I am all too aware that undertaking innovation in the public sector is challenging for a range of reasons; in the planning domain, fear of judicial review is often enough to quash the adoption of innovative approaches. However, the planning system is urgently in need of innovation to drive service efficiencies, sector productivity, and better outcomes. One way to reduce the innovation risk is for planning authorities to collaborate around challenges and work together on adopting standards that unlock replicable solutions; a great strength of local government is that every place is unique and attuned to the needs of its local population, but even so there simply cannot be 418 different ways of running a planning service (or indeed other services). That fragmentation is a major hurdle to both investment in innovative solutions and - importantly - rapid diffusion of proven innovations from place to place.

In the planning space, the new National Planning Policy Framework (NPPF) is becoming clearer about data standards for viability but local plans also need to become more digital and standardised in format (the policies themselves themselves should of course remain locally determined). If we can do this, there are huge potential gains in terms of improving the



pace and transparency of the planning process (with positive effects in terms of developing the right homes in the right places), but also in opening up opportunities for new entrants to build new products and services on top of the data unlocked by the planning system.

This is a critical moment for UK Plc. The UK can be a world leader in digitising the planning system in the same way that we are in Buildings Information Modelling (BIM), which has digitised the architecture and engineering professions. At Future Cities Catapult we have invested energy and resources to help the UK take full advantage of that opportunity, examples of which are included in this latest City Innovation Brief. With the creation of the Geospatial Commission, the appointment of a Chief Digital Officer at the Ministry for Housing, Communities and Local Government and investment in innovation within the Planning Delivery Fund, we are starting to see real traction on this agenda. Long may it continue.

**Nicola Yates OBE – Chief Executive Officer,
Future Cities Catapult**

WHAT'S INSIDE?

This issue of *City Innovation Brief* starts with some of the key announcements and events that have affected cities in the first quarter of 2018. Some highlights include:

- The release of the government's digital charter, making recommendations on online use for future policy decisions.
- Confirmation that the target on extending superfast broadband to 95% of the UK by the end of 2017 was met.
- City councils responding to the collapse of Carillion by bringing more contracts in-house.
- Responses to housing pressures including an off-site constructed development.
- Technology use in social care services.

In the activity tracker, readers will find an accessible summary of all funding that has been made available to projects on the development of cities. Nearly £1190 million has been available in public service tenders, 62% of which is dedicated to digital transformation. The enhancement of cyber security and communications infrastructure is a strong theme across the UK regional and EU funding programmes that were announced this quarter. But the largest fund is the Clean Air Fund, at £220 million, marking a clean commitment from the government to tackle air pollution.

Our featured article in this issue profiles Digital Planning and its effect on the planning and construction industries. This discusses the range of options available – some of which are still nascent and immature – and the benefits they bring to the planning process.



Digest

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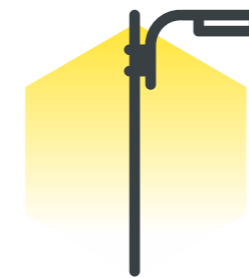
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ENVIRONMENTAL



The Mayor's office announced over £10 million of funding for London boroughs to improve the safety and environments of their streets and local neighbourhoods.

Once again we start the quarterly briefing with a digest of key developments affecting advanced urban services and urban innovation in the UK. This round-up looks at the first quarter of 2018.

POLITICAL

Digital connectivity and data protection continued to be focus areas for the government at the start of this year. Our last insight report covered the cabinet reshuffle with two roles still yet to filled; the [Head of Cyber Security at the Government Digital Service](#) at the Government Digital Service and the [Chair of the Interim Centre for Data Ethics and Innovation](#) of the Interim Centre for Data Ethics and Innovation.

This quarter saw two data protection policy announcements. The [Digital Charter](#) on the standards of internet use was released in January, aiming to ensure free and open internet and respect for personal data and intellectual property online. The National Cyber Security Centre (NCSC) issued [guidance to help organisations running critical infrastructure comply with the Network and Information Systems \(NIS\) Directive](#), which comes into force in May.

Culture Secretary Matt Hancock [raised concerns over the use of personal data from social media in campaigns](#) in recent US and UK elections. This issue remains under investigation by the [Information Commissioner's Office \(ICO\)](#).

More cities are investing in digital tools for city management and citizen engagement. [Salford announced plans to transform its digital infrastructure to better support citizen engagement](#) and [Richmond council updated its digital strategy to stipulate that all policy decisions include a 'Digital Impact Assessment'](#).

This quarter the Government announced it [met its manifesto promise of extending superfast broadband coverage across 95% of the UK by the end of 2017](#). March's Spring Statement saw the first wave of Local Full Fibre Network funding allocated, [including £4 million to the Cambridgeshire and Peterborough networks](#).

Government data also shows the [North-East has the highest superfast broadband coverage in the UK](#) with access available to 97.2% of households and businesses. The region also welcomed the release of the 30-year [Transport for the North's Strategic Transport Plan](#), which focusses on improving transport connections between urban areas across the North.

The [London Assembly for Transport Committee reported](#) that the city is unprepared for the transport landscape of 2040. In response, Deputy Mayor for Transport, Val Shawcross stated that [government support is necessary](#) in the development of the capital's transport networks. The [Mayor's office announced](#) over £10 million of funding for London boroughs to improve the safety and environments of their streets and local neighbourhoods.

ECONOMIC

The start of 2018 saw the collapse of Carillion and growing uncertainty over its impact. There were early calls for support from [Liverpool](#) and [Birmingham](#), which both have multi-million road and rail infrastructure contracts with the company, as well as soft service contracts in school maintenance.

In response, more city councils have sought to regain control of local services. [In Hounslow](#) the parks, cemeteries and allotments are now managed by a council-owned company. [Liverpool](#) has rescinded its procurement of highway services from the private firm Amey after reviewing costs. [The Government committed](#) to funding the contracts of all workers in the public sector and to providing financial support to small business affected. [The National Audit Office](#) released a report on the costs and benefits of the Private Finance Initiative.

More regeneration plans have been announced to boost inner-city economies. [The English Cities Fund](#) has been doubled to [£200 million](#) to further develop public sector partnerships in mixed-use developments. [Ballymena's Michelin facility](#) is to be turned into an [enterprise park](#) with manufacturing, office and warehousing space. At the start of the year, the [Mayor of London](#) approved a [£1.4 billion plan](#) to overhaul Croydon's centre. [Islington Council's](#) plans to create [affordable work spaces](#) across four new properties in Finsbury Park

were approved and [Hounslow Council](#) have secured [£15.6 million](#) to develop Feltham town centre.

A report by Arcadis concluded that the [investment potential of three major regions \(the Northern Powerhouse, London and the South East and the Oxford-Cambridge Corridor\)](#) could be improved with [less road congestion](#). After successful trials in Kent and London, [lane rental schemes to reduce disruption](#) on some of the busiest roads will be rolled out from the Autumn. However, [new analysis by the Local Government Authority \(LGA\)](#) reveals the Government's national road network is receiving 52 times more funding per mile than councils' local roads.

The visitor economy remains strong across UK cities with an [early evaluation of the impact of Hull's year as the UK's City of Culture](#) showing that an estimated additional 400,000 – 700,000 visitors to the city in 2017, adding up to £19 million to its economy.

SOCIAL

Social care costs continue to pressure council budgets, with [Sutton council](#) announcing a [4% increase](#) in council tax to support this. New research from National Energy Action charity has found that the [UK has sixth-worst long-term trend in excess winter deaths in Europe](#), with an average of 32,000 excess winter deaths over the past five years of which around



Ofgem has been working to safeguard vulnerable households from excessive energy costs.

9,700 are due to cold housing.

Scotland hosted an energy summit in January which reviewed the [strategic commitment to introducing the Warm Homes Bill this summer](#) and [called on the 'Big 6' energy companies to do more to tackle the issue](#).

Ofgem has been working to safeguard vulnerable households from excessive energy costs; [the prepayment safeguarding tariff was extended](#) to a further 1 million households and further [trials on how to encourage and support households in switching from expensive deals](#) were announced.

Meanwhile, [a report from the Salford Anti-Poverty Taskforce](#) raised concerns over the poor quality of rental housing and the inability of many tenants to find alternatives. [The government confirmed its support](#) for legislation against unsafe or substandard rental properties. Social housing provision has been scrutinised as figures were released showing that [only one home has been built for every three sold off under the Right to Buy scheme](#).

Towns and cities are responding to the social housing challenge. For example, [Sutton is seeing new social houses being built for the first time in nearly 30 years](#), [Sheffield is increasing funding to provide 500 extra homes](#) on top of the 1000 planned for 2020 and [Islington has proposed £57 million to build new homes](#) in its budget.

The Committee for Communities and Local Government has [concluded that a national strategy on the housing needs for older people](#) is required.

The Government has provided [an extra £42 million of funding](#) to help elderly and disabled residents live independently by adapting their homes. Local authorities are making similar plans, for example the borough of Greenwich released [its 5-year strategy for learning disability housing](#), which also includes the provision of adaptations.

Affordable housing developments are being initiated on brownfield sites across London, including [Holloway Prison](#), [Citroen's site in Brentford](#) and [Battersea Power Station](#). New construction and ownership models are being explored, such as a [21-storey modular housing development for Croydon being constructed off-site](#), and a report by the London Assembly Housing Committee was released that [investigated Property Guardianship](#).

Elsewhere, the issue of empty homes is being tackled. [Development of Manchester's Ben Street area will begin early this year](#), including the full refurbishment of 62 empty homes previously acquired by the council. [Bristol is working with a range of partners](#) to bring some of its 91 properties, many currently empty, up to standard. In new legislation, [English local authorities are now able to charge double the rate of council tax](#) on homes left empty for two years or more to encourage their return to use.

[Rough sleeping in Autumn 2017 was up 15%](#) from the previous year. The Housing Minister's [Rough Sleeping Advisory Panel met for the first time](#), supporting the government's targets to eradicate



More regeneration plans have been announced to boost inner-city economies.

It was announced that the new thresholds will see 50,000 more children eligible for free school meals by 2022.

rough sleeping by 2027. Greater Manchester, Oxford City, Waltham Forest and Richmond councils have all announced increased funding and new strategies to tackle homelessness. Manchester has also opened a new prevention centre with 38 beds available. Birmingham entrepreneurs launched an app to help link homeless people with local landlords.

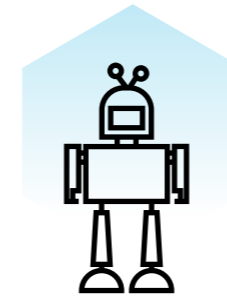
It was announced that the new thresholds will see 50,000 more children eligible for free school meals by 2022. In Aberdeen, councillors approved plans to expand on a trial scheme offering free meals to eligible children during school holidays. The government is providing an extra £26 million to charity-run school breakfast clubs. Initiatives outside of schools include Newcastle's Good Food Plan, released in February to provide a blueprint for creating a

sustainable and healthy food culture.

Coventry was named as the City of Culture 2021, whilst other cities in the shortlist have benefitted from a renewed focus on their culture. Sunderland's bid has transformed into Sunderland Culture and Paisely's into Paisley Is. A joint statement was released from the cities bidding for the European City of Culture 2023 acknowledging that it wouldn't be possible to continue the process. Waltham Forest & Brent were named as the first-ever London Boroughs of Culture in 2019 and 2020 respectively.

TECHNOLOGICAL

Government and public-sector spending on digital services surpassed £3 billion in February. More cities are



More councils are embracing the opportunity to use technology to provide better care services.

utilising digital services, with a multi-functional local information and communication platform launched in Stirling for example.

More councils are embracing the opportunity to use technology to provide better care services. Both Hampshire and Norfolk councils are trialling the use of an Amazon Alexa in adult social care. Knowsley council are offering residents a free trial of a Telecare communication system to help them remain independent at home and Wigan council have developed a bungalow to showcase a variety of support systems that a resident could install. Glasgow has committed to funding the development of a remote digital alarm monitoring solution. Hounslow Council have made efficiency savings in their support of new mothers by developing

a free app to provide them with information and support 24 hours a day.

More generally, the NHS is developing its use of data; NHS Digital have announced guidance on data security and recommendations have been made on the future use of AI within the service.

Technology infrastructure has also seen developments this quarter. London has received the biggest upgrade to its electricity grid since the 1960s with the opening of the underground energy superhighway.

UK5G was launched in March. The group of organisations will align the UK as the global-leader in development and adoption of the super-fast mobile network. It's been estimated that upgrading the UK will boost cities' productivity by £6 billion a year. Existing



networks are also accelerating, with [Wandsworth introducing multi-media communication hubs to support their public Wi-Fi provision](#) and [Milton Keynes pioneering the installation of a Giga-bit speed broadband network](#). In more rural areas, [the Church of England has agreed that church spires can be used to address connectivity issues](#).

London also saw milestones in the use of autonomous vehicles (AVs), with [the UK's first driverless mainline train crossing the city in March](#). In Greenwich, [driverless pods are available for the public to trial](#). Automated delivery robots from [Starship Technologies have expanded their operations into Richmond](#).

Elsewhere, it was announced that [Oxford will be the first city to trial fully connected AVs on UK roads](#) and [Cambridge will develop an autonomous shuttle bus service](#) after winning funding from Innovate UK.

LEGAL

A survey undertaken four months before its introduction found that only 38% of businesses and 44% of charities have [heard of the General Data Protection Regulation \(GDPR\) act](#). Data protection and online safety will be further enhanced as [the government has announced a review into laws relating to online content](#), announced on [Safer Internet Day](#) which marketed

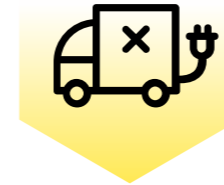
improved guidance for teachers on developing children's internet safety skills.

Meanwhile, in terms of internet access the [Universal Service Obligation](#) was committed to law, ensuring that by 2020 all UK residents have access to an affordable internet connection of at least 10Mbps.

Progress was made on a range of transport legislation this quarter. The bill on Automated and Electric Vehicles is [progressing through the House of Lords without any division](#), whilst the government has commissioned a [three-year review of driving laws](#) to remove any legal obstacles to the development of AVs.

Other legal developments related to transport include a commitment from the government on [improving wheelchair access on public buses](#), whilst a bill on taxi and private hire vehicle licencing fell through, [to the disappointment of the LGA](#). [Private parking companies are set to face tougher legal standards](#) and TfL released [a new policy statement on the future of private-hire and ride sharing regulations](#). However, the [London Assembly Transport Committee was critical of Transport for London's regulation of dockless bike schemes](#).

The government lost a [third judicial case to ClientEarth](#) over breaches in air pollution levels. This is despite reports of [London's air quality being within legal limits in January](#) for the first time in 10 years.



More cities are embracing greener vehicle options for fleets and public transport.

ENVIRONMENTAL

As part of the target in the government's [25-year environmental plan](#) to introduce one million urban trees, [Hackney and Wandsworth boroughs](#) have collectively planted nearly 900 trees. [Newcastle became home to England's first moss-tree](#), a living piece of street furniture with a pollution absorption capacity equivalent to 275 trees.

Initiatives are in place to tackle air pollution across the UK. Glasgow has confirmed that its [low-emission zone will be introduced by the end of the year](#) and [Leeds held a consultation on introducing one](#). The government has [allocated £40 million of funding to English local authorities](#) to support the use of low-emission buses in urban areas. West Yorkshire, Bristol, Gateshead and Leeds received the most money. [Scotland has allocated £1.5 million to its fund for retrofitting buses with emission-reducing exhausts](#).

More cities are embracing greener vehicle options for fleets and public transport. Liverpool is [trials an electric street sweeper](#), Sheffield is hoping to [convert their end-of-life diesel refuse trucks to electric ones](#), and Islington announced plans for [compressed natural gas \(CNG\) and electric vehicles across its fleet](#)

Nottingham City Council is [purchasing ULEV cabs for its taxi fleet](#) and another route in the City of London has turned electric with [11 buses from China-based BYD and Scotland-based manufacturer Alexander Dennis](#). In Bristol,

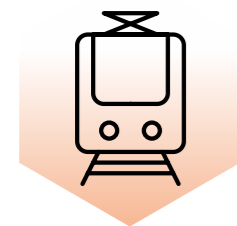
the social enterprise Bristol City Transport has been awarded the contract for the longest route in the city, who announced a [£7 million investment on 21 'biogas' buses which are fuelled by food waste and municipal sewage](#).

Government [funding for electric vehicle charging points](#) has gone underused by local authorities, with BEIS calling for more uptake of this fund. This is despite the installation of [London's first 100 chargers in their a roll-out of an electric-vehicle rapid charging network](#) and the [opening of Dundee's charging hub](#), which sees local renewable energy generation and storage technology used in the UK for the first time.

Dockless bike services such as [Ofo](#) and [Mobike](#) have been expanding across England into new locations and London's [Santander bikes were launched in Brixton](#). Also in the city, [cargo bikes are being trialled as a logistic solution in the square mile](#).

Promoting and supporting cycling continues across the country with examples being Brighton and Hove [installing 200 new bike parking spots](#) and [Falkirk opening an active travel hub](#).

Away from transport, efforts to reduce plastic use continue in London with [the introduction of more public water fountains](#), and [the City of London Corporation's plan for a Plastic Free City](#). Further afield, [Glasgow Council ending its use of plastic straws](#) and [Aberdeen announcing that they may do the same](#).



London also saw milestones in the use of autonomous vehicles (AVs), with the UK's first driverless mainline train crossing the city in March.

ACTIVITY TRACKER

Around **£830M** of funding and tender opportunities advertised this quarter related to Advanced Urban Services

Around £830 million was made available in funding for advanced urban services this quarter, with the largest amount coming from UK Government sources. The figure represents a fall of over 50% in funding identified in previous quarters, largely due to the lack of large (£1billion) funds announced in other quarters.

The largest funding pots came from the release of the Clean Air Fund (£220 million), first announced in the [Air Quality Plan](#) in 2017 Q3. Other notable funds include a £100 million SME Equity Fund announced for SMEs

based in the Midlands, and the release of £60 million from the [Transforming Cities Fund](#) from the Department for Transport.

Regional funding remains focussed on low carbon economies, green mobility and communications infrastructures. A series of opportunities on these themes was released by ERDF across a range of regions; the low carbon economy funds covers 14 different regions.

European funding made available this quarter largely focused on using technology to foster resilience in the face of growing cyber and physical

threats. The five largest funds intend to generate enhanced critical security systems and to apply technology to improve security and disaster response programmes. For example, the all-round fund on the defence of critical infrastructure and the call for technologies to assist first-responders in natural or man-made disasters.

The focus on resilience is mirrored in the only two private sector funds announced this quarter: on the development of community resilience in North Scotland and Central Southern England. ▶



UK FUNDING PROGRAMMES ANNOUNCED AND OPENED THIS QUARTER TOTAL: £555.15M

▼ Clean Air Fund

- Pr DEFRA
- £220M
- ☆ A fund to help eligible local authorities tackle roadside emissions.
- ⊙ Eligible English local authorities identified by the Government
- 15 23 Mar – Ongoing

▼ SME Equity Fund

- Pr ERDF/ EIB/ BEIS/ British Business Banks
- £100M
- ☆ Equity Finance funds to boost SME growth in the Midlands.
- ⊙ SMEs based in the Midlands
- 15 22 Feb – no deadline

▼ Low Carbon Infrastructure Transition Programme

- Pr Scottish Government/ ERDF
- £60M
- ☆ Projects delivering innovative low carbon energy infrastructure solutions in Scotland. Proposals should be on the themes of integrated energy systems, low carbon heat, or, ultra-low emission vehicle infrastructure.
- ⊙ Organisations delivering work in Scotland
- 15 22 Jan – 30 April 2018

▼ Transforming Cities Fund

- Pr DfT
- £60M
- ☆ The Transforming Cities Fund aims to improve productivity and spread prosperity through investment in public and sustainable transport in some of the largest English city regions.
- ⊙ English local authorities
- 15 13 Mar – 8 June 2018

▼ Coastal Communities Fund: round 5

- Pr MHCLG
- £40M
- ☆ Funding to transform the UK's coastal communities through investment in jobs, skills and local businesses

- ⊙ English local authorities
- 15 26 Feb – 30 April 2018

▼ January 2018 sector competition: strand 2, emerging and enabling technologies

- Pr Innovate UK
- £19M
- ☆ Innovation projects that inspire new products, processes and services that address challenges in emerging and enabling technologies.
- ⊙ UK-based business working in the UK
- 15 22 Jan – 28 March 2018

▼ March 2018 sector competition: Open

- Pr Innovate UK
- £19M
- ☆ Funding for highly innovative projects with the best game changing and/or disruptive ideas or concepts and with a view to commercialisation and economic impact. Proposals can come from any technology (including arts, design, media or creative industries) and any part of the economy.
- ⊙ UK-based business of any size
- 15 1 Mar – 9 May 2018

▼ Connected and autonomous vehicles simulation: collaborative R&D

- Pr Centre for Connected and Autonomous Vehicles/ Innovate UK
- £15M
- ☆ Industry-led projects using holistic simulation and modelling systems to develop approval mechanisms and standards to support the deployment and development of CAVs.
- ⊙ UK-based businesses
- 15 15 Jan – 2 May 2018

▼ Ultra-low emission bus scheme

- Pr DfT
- £11M
- ☆ To increase the uptake of ultra-low emission buses (ULEB), speeding up the full transition to a LEB and ULEB fleet in England and Wales, reducing the need for subsidy support; as well as to support the improvement of local air quality.
- ⊙ Local or Combined Authorities (England & Wales) or bus operators
- 15 11 Mar – 30 June 2018

▼ Digital health technology catalyst round 2 2+

- Pr Digital Health Technology Catalyst (DHTC)

- £8M
- ☆ Projects should develop new commercial digital technology solutions to address significant healthcare challenges.
- ⊙ SME-led consortia
- 15 15 Feb – 18 April 2018

▼ Non-domestic Smart Energy Management Innovation Competition

- Pr BEIS
- £1.8M
- ☆ Developing new ideas for products and services that use smart meter data to reduce energy demand in small, non-domestic buildings. This includes shops, restaurants and schools.
- ⊙ UK businesses
- 15 2 Jan – 9 Feb 2018

▼ Support for SMEs to evaluate innovative medical technologies

- Pr Innovate UK
- £1M
- ☆ This support is intended to allow companies to collect and analyse clinical performance and cost effectiveness data within an NHS setting. Proposals should generate an evidence base that will enable the evaluation of products that address NHS priorities.
- ⊙ Business-led projects
- 15 29 Jan – 21 March 2018

▼ SBRI: roads for the future for connected and autonomous vehicles

- Pr Highways Agency / National Infrastructure Commission
- £200K
- ☆ £150K is available for up to 5 feasibility studies with the best project receiving an additional £50K. Innovative ideas on how UK roads are designed, managed and used are sought to accommodate and maximise the benefits of connected and autonomous vehicles (CAVs).
- ⊙ Any organisation registered with Companies House with ideas applicable to UK ideas
- 15 15 Jan – 7 March 2018

▼ SBRI competition: agile and self-powered public space CCTV

- Pr SBRI
- £150K
- ☆ Organisations can apply for a share of the money for R&D for new, innovative public space CCTV solutions.

Any organisation
8 Jan – 2 Feb 2018

5G Urban Connected Communities Project (Portion from £200M allocated to DCMS's 5G Testbeds and Trials Programme)

DCMS
TBC
The 5G Testbeds and Trials Programme in DCMS is seeking expressions of interest from public sector authorities who wish to take a key role in the delivery of an Urban Connected Communities project based on a large-scale city area in the UK.
UK local authorities & potential private partners
30 Mar – 5 June 2018

UK REGIONAL FUNDING OPENED THIS QUARTER
TOTAL: £78.85M

Low Carbon: call in the North East

ERDF
£15M
Call to run project's supporting the shift towards a low carbon economy in the North East
Organisations operating in the North East area
2 Mar – 20 April 2018

Low Carbon: call in Lancashire

ERDF
£8.143M
Call to run project's supporting the shift towards a low carbon economy in Lancashire
Organisations operating in the Lancashire area
2 Mar – 20 April 2018

Low Carbon: call in Leeds City Region

ERDF
£8M
Call to run projects supporting the shift towards a low carbon economy in Leeds City Region
Organisations operating in the Leeds City Region
2 Mar – 20 April 2018

Low Carbon: call in Tees Valley

ERDF
£5M
This call is looking to support the shift towards a low carbon economy in all sectors
Organisations operating in the Tees Valley area
2 Mar – 25 May 2018

Information and Communications Technology: call in Leeds City Region

ERDF
£5M
Call to run a project enhancing access to, and use and quality of, Information and Communications Technology in Leeds City Region.
Organisations operating in the Leeds City Region
2 Mar – 20 April 2018

Low Carbon: call in Coventry and Warwickshire

ERDF
£4.27M
Call to run projects supporting the shift towards a low carbon economy in Coventry and Warwickshire
Organisations operating in Coventry and Warwickshire
2 Mar – 20 April 2018

Low Carbon: call in Worcestershire

ERDF
£3.6M
Call to run projects supporting the shift towards a low carbon economy in Worcestershire
Organisations operating in the Worcestershire area
2 Mar – 20 April 2018

Climate change: call in Humber

ERDF
£3.6M
Call for projects promoting climate change adaptation, risk prevention and management in Humber
Organisations operating in the Humber area
2 Mar – 20 April 2018

Information and Communications Technology: call in Coventry and Warwickshire

ERDF
£3.294M
Call to run a project enhancing access to, and use and quality of, Information and Communications Technology in Coventry and Warwickshire.
Organisations operating in the Warwickshire area
2 Mar – 20 April 2018

Low Carbon: call in Cheshire and Warrington

ERDF
£3M
Call to run projects supporting the shift towards a low carbon economy in Cheshire and Warrington
Organisations operating in Cheshire and Warrington
2 Mar – 20 April 2018

Low Carbon: call in Stoke-on-Trent and Staffordshire

ERDF
£2.6M
Call to run projects supporting the shift towards a low carbon economy in Stoke-on-Trent and Staffordshire
Organisations operating in the Stoke-on-Trent and Staffordshire area
2 Mar – 20 April 2018

Low Carbon: call in Greater Lincolnshire

ERDF
£2.288M
Call to run projects supporting the shift towards a low carbon economy in Greater Lincolnshire
Organisations operating in the Greater Lincolnshire area
2 Mar – 20 April 2018

SME Support (Digital Economy): call in Sheffield City Region

ERDF
£2M
Call to run projects enhancing the competitiveness of small and medium sized enterprises in Sheffield City Region
Organisations operating in the Sheffield City Region area
2 Mar – 20 April 2018

Low Carbon: call in Greater Manchester

ERDF
£2M
Call to run projects supporting the shift towards a low carbon economy in Greater Manchester
Organisations operating in the Greater Manchester area
2 Mar – 20 April 2018

Low Carbon: call in The Marches – transition region only

ERDF
£1.5M
This call is looking to support the shift towards a low carbon economy in all sectors
Organisations operating in The Marches area
2 Mar – 20 April 2018

Low Carbon: call in Enterprise M3

ERDF
£1.5M
Call to run projects supporting the shift towards a low carbon economy in Enterprise M3
Organisations operating in the Enterprise M3 area
2 Mar – 20 April 2018

Information and Communications Technology: call in Leicester and Leicestershire

ERDF
£1.3M
Call to run a project enhancing access to, and use and quality of, Information and Communications Technology in Leicester and Leicestershire.
Organisations operating in Leicester and Leicestershire
2 Mar – 20 April 2018

Information and Communications Technology: call in Lancashire

ERDF
£1.223M
Call to run a project enhancing access to, use and quality of, Information and Communications Technology in Lancashire.
Organisations operating in the Lancashire area
2 Mar – 20 April 2018

Information and Communications Technology: call in the Black Country

ERDF
£1.2M
Call for project's enhancing access to, and use and quality of, Information and Communications Technology in the Black Country
Organisations operating in the Black Country
2 Mar – 20 April 2018

Low Carbon: call in Buckinghamshire Thames Valley

ERDF
£1.123M
Call to run projects supporting the shift towards a low carbon economy in Buckinghamshire Thames Valley
Organisations operating in the Buckinghamshire Thames Valley area
2 Mar – 20 April 2018

Information and Communications Technology: call in Tees Valley

ERDF
£1.1M
This call is looking to enhance access to, use and quality of, Information and Communications Technology, and specifically extending broadband deployment and the roll-out of high-speed networks to support emerging technologies and developing ICT products.
Organisations operating in the Tees Valley area
2 Mar – 25 May 2018

Low Carbon: call in Hertfordshire

ERDF
£1M
Call to run projects supporting the shift towards a low carbon economy in Hertfordshire
Organisations operating in the Hertfordshire 3 area
2 Mar – 20 April 2018

Information and Communications Technology: call in Buckinghamshire Thames Valley

ERDF
£759K
Call for projects enhancing access to, and use and quality of, Information and Communications Technology in Buckinghamshire Thames Valley.

Organisations operating in the Buckinghamshire Thames Valley area
2 Mar – 20 April 2018

SBRI Glasgow: technology for monitoring risk management at home

Glasgow's Health and Social Care Partnership (HSCPI) Can Do Challenge
£150K
Projects are being asked to develop a remote digital alarm monitoring system that can help with the management of risks in the home and that links into Glasgow's existing telecare platform.
Any organisation able to test their technology in Glasgow and integrate it with the existing telecare platform
19 Feb – 25 April 2018

ScotRail Cycle Fund

ScotRail
£100K
This fund is aimed at improving access and facilities for cyclists at Scotland's stations. The funding will be used to deliver projects which contribute to ScotRail's vision of providing a 'doorstep to destination' journey for customers, whilst reducing congestion and pollution.
Local authorities and community groups
Opened 27 Mar

London Drinking Fountain Fund

Mayor of London/ MIW Water Cooler Experts/ #OneLess
£75K
Projects installing an initial network of up to 20 drinking fountains across the capital, making it easy for Londoners to refill on the go. Successful bidders will get their own drinking fountain to keep and be part of the refill revolution sweeping the capital.
Land owners, site owners, businesses business improvement districts, councils, or educational institutions.
25 Mar – 24 April 2018

The Good Help Award

Nesta
£25K
This fund is for practitioners running innovative 'good help' programmes which have the potential to transform public services across the country.
6 Feb – 18 May 2018

EUROPEAN FUNDING PROGRAMMES OPENED THIS QUARTER
TOTAL: €224.5M

Prevention, detection, response and mitigation of combined physical and cyber threats to critical infrastructure in Europe

- European Commission (H2020)
- €24M
- Proposals should cover: forecast, assessment of physical and cyber risks, prevention, detection, response, and in case of failure, mitigation of consequences (including novel installation designs), and fast recovery after incidents, over the life span of the infrastructure, with a view to achieving the security and resilience of all functions performed by the installations, and of neighbouring populations and the environment.
- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018

Technologies to enhance border and external security

- European Commission (H2020)
- €21M
- Innovation for border and external security may draw from novel technologies, if they are affordable, accepted by citizens and customized and implemented for the needs of security practitioners.
- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018

Technologies for first responders

- European Commission (H2020)
- €21M
- Proposals are invited to propose novel solutions improving the protection of first responders against multiple and unexpected dangers or enhancing their capacities by addressing related research and innovation issues victim detection technologies.
- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018

Technologies to enhance the fight against crime and terrorism

- European Commission (H2020)
- €21M
- Organized crime and terrorist organisations are often at the forefront of technological innovation in planning, executing and concealing their criminal activities and the revenues stemming from them. Law Enforcement Agencies (LEAs) are often lagging when tackling criminal activities supported by advanced technologies. Proposals are welcomed to address this.
- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018

Cybersecurity in the Electrical Power and Energy System (EPES): an armour against cyber and privacy attacks and data breaches

- European Commission (H2020)
- €20M
- To pursue the integration of the renewables within the existing EPES and to ensure that it benefits from the advantages brought by a modern digitalised electricity grid, there is a need for new security approaches detecting and preventing threats with severe impacts and to shield the electric system against cyber-attacks.
- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018

Cybersecurity preparedness – cyber range, simulation and economics

- European Commission (H2020)
- €16M
- The proposals should develop, test and validate highly customizable dynamic simulators serving as knowledge-based platforms accompanied with mechanisms for real time interactions and information sharing, feedback loops, developments and adjustments of exercises.
- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018

Decarbonisation of the EU building stock: innovative approaches and affordable solutions changing the market for buildings renovation

- European Commission (H2020)
- €12M
- Proposals should demonstrate solutions addressing building fabric and/or technical systems that ensure faster and more cost-effective deep renovations that result in high energy performance. Proposals should include innovations in technology and in design and construction methods with low embodied energy and on-site works organisation, industrialization and lowering cost of energy retrofitting and they should consider any architectural constraints.
- At least 3 legal entities from different Member or Associated States
- 25 Jan – 4 Sept 2018

Integrated home renovation services

- European Commission (H2020)
- €10M
- This topic aims at creating or replicating innovative local or regional "integrated home renovation services". The developed services should cover the whole "customer journey" from technical and social diagnosis, technical offer, contracting of works, structuring and provision of finance (e.g. loans or EPCs), to the monitoring of works and quality assurance.
- At least 1 legal entity from a Member or Associated State
- 25 Jan – 4 Sept 2018
- Demonstration of applied solutions to enhance border and external security**
- European Commission (H2020)
- €10M
- Consortia are invited to propose demonstration of high (6-8) Technology Readiness Levels (TRL) systems applied in the context of border and external security.
- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018

Human factors, and social, societal, and organisational aspects for disaster-resilient societies

- European Commission (H2020)
- €10M
- The resilience of societies heavily depends on how their citizens behave individually or collectively, and how governments and civil society organisations design and implement

policies for mitigating risks, preparing for, reacting to, overcoming, and learning from disasters.

- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018
- Business case for industrial waste heat/cold recovery**
- European Commission (H2020)
- €9M
- Proposals should develop integrated cost-benefit simulation tools that, based on the characterization of processes, heat/cold streams and other relevant variables, can determine the best utilisation options of recovered waste heat/cold and/or surplus renewable energy from industrial and eventual other sources (when available).
- At least 3 legal entities from different Member or Associated States
- 25 Jan – 4 Sept 2018

Digital security, privacy, data protection and accountability in critical sectors

- European Commission (H2020)
- €8.5M
- In critical vertical sectors/domains, cybersecurity technologies deployed in several application domains should be aligned to the specific domain needs, linking the demand and supply sides for such cyber technologies. In the context of an increased digitization and of growing complexity of cyber-attacks, there are certain sectors/subsectors identified as critical from the point of view of cybersecurity needs in the NIS Directive: energy; transport; banking; financial market infrastructures; health sector; care settings; drinking water supply; and, digital infrastructure.
- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018

Supporting public authorities to implement the Energy Union

- European Commission (H2020)
- €8M
- Local and regional public authorities have a crucial role in setting ambitious energy efficiency strategies, for instance in the framework of the Covenant of Mayors for Climate & Energy and Smart Cities & Communities or the Clean Energy for All islands initiative. Support should continue and be reinforced in building capacity of public authorities and

empowering them to take up their role of energy transition leaders at regional and local level.

- At least 1 legal entity from a Member or Associated State
- 25 Jan – 4 Sept 2018
- Information and data stream management to fight against (cyber) crime and terrorism**
- European Commission (H2020)
- €8M
- Large amounts of data and information from a variety of origins have become available to practitioners involved in fighting crime and terrorism. Full advantage is not currently taken of the most advanced techniques for Big Data analysis, and artificial intelligence. Proposals are welcomed to address this.
- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018

Aggregation - Project Development Assistance

- European Commission (H2020)
- €7M
- The action will support building technical, economic and legal expertise needed for project development and leading to the launch of concrete investments, which are the final aim and deliverable of the project.
- At least 1 legal entity from a Member or Associated State
- 25 Jan – 4 Sept 2018

Pre-normative research and demonstration for disaster-resilient societies

- European Commission (H2020)
- €6M
- The Mandate M/487 to Establish Security Standards coordinated by the European Committee for Standardization has clearly recognized the whole field of "crisis management and civil protection" as one of the three priorities for establishing standards in the security sector. It has identified the need for crisis management and civil protection standardization activities to facilitate response, effectiveness, efficiency and cooperation as top priorities, especially in what regards to natural hazard emergencies.
- At least 3 legal entities from different Member or Associated States
- 15 Mar – 23 Aug 2018



▼ **Mitigating household energy poverty**

- Pr European Commission (H2020)
- €5M
- ⚙️ Actions should contribute to actively alleviating energy poverty and developing a better understanding of the types and needs of energy poor households and how to identify them, considering gender differences where relevant, building on any existing initiatives such as the European Energy Poverty Observatory.

- 🎯 At least 1 legal entity from a Member or Associated State

📅 25 Jan – 4 Sept 2018

▼ **Enabling next-generation of smart energy services valorising energy efficiency and flexibility at demand-side as energy resource**

- Pr European Commission (H2020)
- €4M
- ⚙️ Actions should allow different market actors to get together and focus on developing integrated concepts and models, as well as covering a selection of relevant areas e.g. non-energy features that help support the up-take of innovative energy efficiency services and technologies.

- 🎯 At least 1 legal entity from a Member or Associated State

📅 25 Jan – 4 Sept 2018

▼ **Innovative financing for energy efficiency investments**

- Pr European Commission (H2020)
- €4M
- ⚙️ There is a need to set up innovative financing schemes at regional or national level to create the conditions for adequate supply of private finance for energy efficiency investments. Proposals should address the development or replication and implementation of innovative financing schemes for energy efficiency investments.

- 🎯 At least 1 legal entity from a Member or Associated State

📅 25 Jan – 4 Sept 2018

PRIVATE SECTOR FUNDING
TOTAL: £440K

▼ **Resilient Communities Fund – North of Scotland**

- Pr Scottish & Southern Electricity Networks
- £220K

- ⚙️ A fund to support communities to improve their resilience. The fund will support projects that address: 1. Vulnerability – To protect the welfare of vulnerable community members through enhancing their resilience and improving community participation and effectiveness.

- 2. Resilience for Emergency Events – To enhance community facilities, services and communication specifically to support the local response in the event of a significant emergency event.

- 🎯 Communities in the North of Scotland

📅 28 Feb - 15 May 2018

▼ **Resilient Communities Fund – Central Southern England**

- Pr Scottish & Southern Electricity Networks
- £220K

- ⚙️ A fund to support communities to improve their resilience. The fund will support projects that address: 1. Vulnerability – To protect the welfare of vulnerable community members through enhancing their resilience and improving community participation and effectiveness.

- 2. Resilience for Emergency Events – To enhance community facilities, services and communication specifically to support the local response in the event of a significant emergency event.

- 🎯 Communities in Central Southern England

📅 28 Feb – 15 May 2018



PUBLIC SECTOR TENDERS ADVERTISED

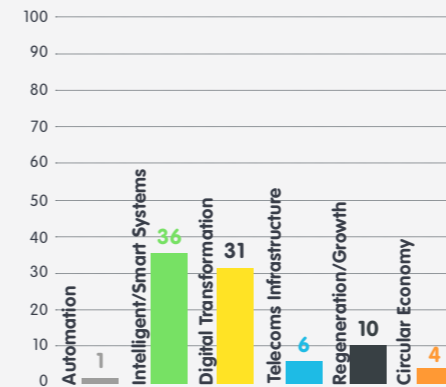
In this quarter, the largest proportion of UK public sector tenders in the advanced urban services sector was in digital transformation, regarding shared and integrated platforms, data management and digitalisation of services.

The highest value UK public sector tenders were also in digital transformation, at over £500m, with growth & regeneration coming second, driven by the £400m procurement for the Better Queensway Regeneration Project in Southend-on-Sea.

NUMBER OF TENDERS ADVERTISED Q4 2017

Percentage of total (rounded to whole number)

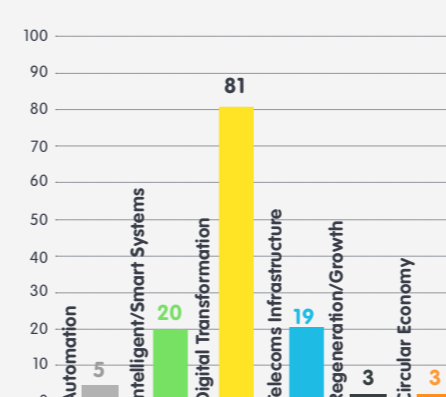
Total advertised: 88



NUMBER OF TENDERS ADVERTISED Q1 2018

Percentage of total (rounded to whole number)

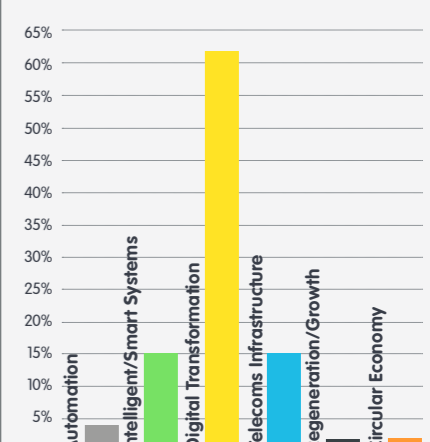
Total advertised: 131



Category	Number of tenders where the value (budget) is stated	Total value (budget), where stated*
Automation	3	£1.4m
Intelligent / Smart Systems	17	£178m
Digital Transformation	54	£500.8m
Telecoms Infrastructure	14	£102.9m
Regeneration & Growth	3	£404m
Circular Economy	2	£0.1m
Total	93	£1,187.2m

*Rounded to the closest 100,000

TENDERS IN EACH CATEGORY



NOTABLE APPOINTMENTS

January – March 2018



Chair of the Office of Rail and Road (ORR)

Professor Stephen Glaister CBE

Director Corporate and Commercial, Royal Borough of Kingston-upon-Thames
Sarah Ireland

Director for Growth, Royal Borough of Kingston-upon-Thames
Nazeya Hussain

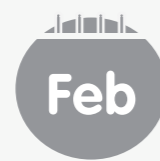
Director for Communities, Royal Borough of Kingston-upon-Thames
Stephen Evans

Interim Chief Executive, D2N2 LEP
Matthew Wheatley

Environment Agency Board
Judith Batchelar OBE
Robert Gould
John Lelliott OBE
Caroline Mason CBE
Lynne Frostick
Gill Weeks OBE

Chair of UK Research and Innovation
Sir John Kingman

Chief Executive, Transport for the North
Barry White



Chief Clinical Information Officer for Health and Care, NHS England and NHS Improvement
Dr Simon Eccles

Northern Powerhouse Rail Director, Transport for the North
Tim Wood

Consultant in Public Health, Wolverhampton
Dr Kate Warren



Director Museums, Arts Council
Kate Bellamy

Director Music and London, Arts Council
Dr Claire Mera-Nelson

Director Libraries and Birmingham Arts Council
Sue Williamson

Chief Information Security Officer, Scottish Digital Office for Local Government
Andy Grayland

Trustees of the VisitEngland Board

Fiona Pollard
Allan Lambert

Chair of the Planning Inspectorate board
Trudi Elliott

Member of The Cleaner Air for Scotland Governance Group
Professor Campbell Gemmill

Chair of Arts Council England's London Area Council
Ruth Mackenzie CBE

Members of the London Policing Ethics Panel

Dr Suzanne Shale (Chair)
Professor Deborah Bowman
Dr Priya Singh
Professor Leif Wenar

Lead Officer, Central Edinburgh Transformation project
Daisy Narayanan



Head of Cyber Security, Government Digital Service

Chair of Interim Centre for Data Ethics and Innovation

Director of People and Culture, British Transport Police

EVENTS

May – September 2018

In this quarter's edition we have changed the focus on events. Rather than review events around the UK that have happened, we are highlighting upcoming events that *City Innovation Brief* readers may be interested in attending.



Scottish Local Government Digital Office – Partnership Forum

Edinburgh
Digital Office for Scottish Local Government
2nd May

Scoping 2018 Funding Support for EV Charging Infrastructure

Bristol & London
The Knowledge Transfer Network
1st May and 3rd May

GreenFleet Scotland

Edinburgh
GreenFleet
4th May

17th E-cosse Stakeholder Forum

Inverness
E-cosse
11th May

Connected Transport Systems- Evening Talk Series – Big Data

Aberdeen
Aberdeen City Council, Robert Gordon University, University of Aberdeen
30th May

Smart City Strategies

London
Parliament Street
6th June

Global Smart City Summit – Real Solutions for Cities

Liverpool
Smart Liverpool
14th June

Oxford Electric Vehicle Summit 2018

Oxford
Oxford City Council
4th-5th July

FutureFest 2018

London
Nesta
6th-7th July

Smart Places, Smart People 2018

London
UKAuthority
17th September

Smart Cities and Communities: Solving Urban Challenges

Manchester
Open Forum Events Ltd
27th September



Location



Organiser



Date

FOCUS ON: DIGITAL PLANNING

This edition of the City Innovation Brief focusses on the use of digital technology to overcome key challenges in the planning process.

The challenge

The planning process is a complex ecosystem. There are multiple stakeholders, a need to deliver sustainable development amidst resource constraints and extensive standards and policies to abide by. Digital approaches have the potential to simplify how stakeholders interact, improve the efficiency of the planning process and engage more people in how their neighbourhoods, towns and cities will change in the future.

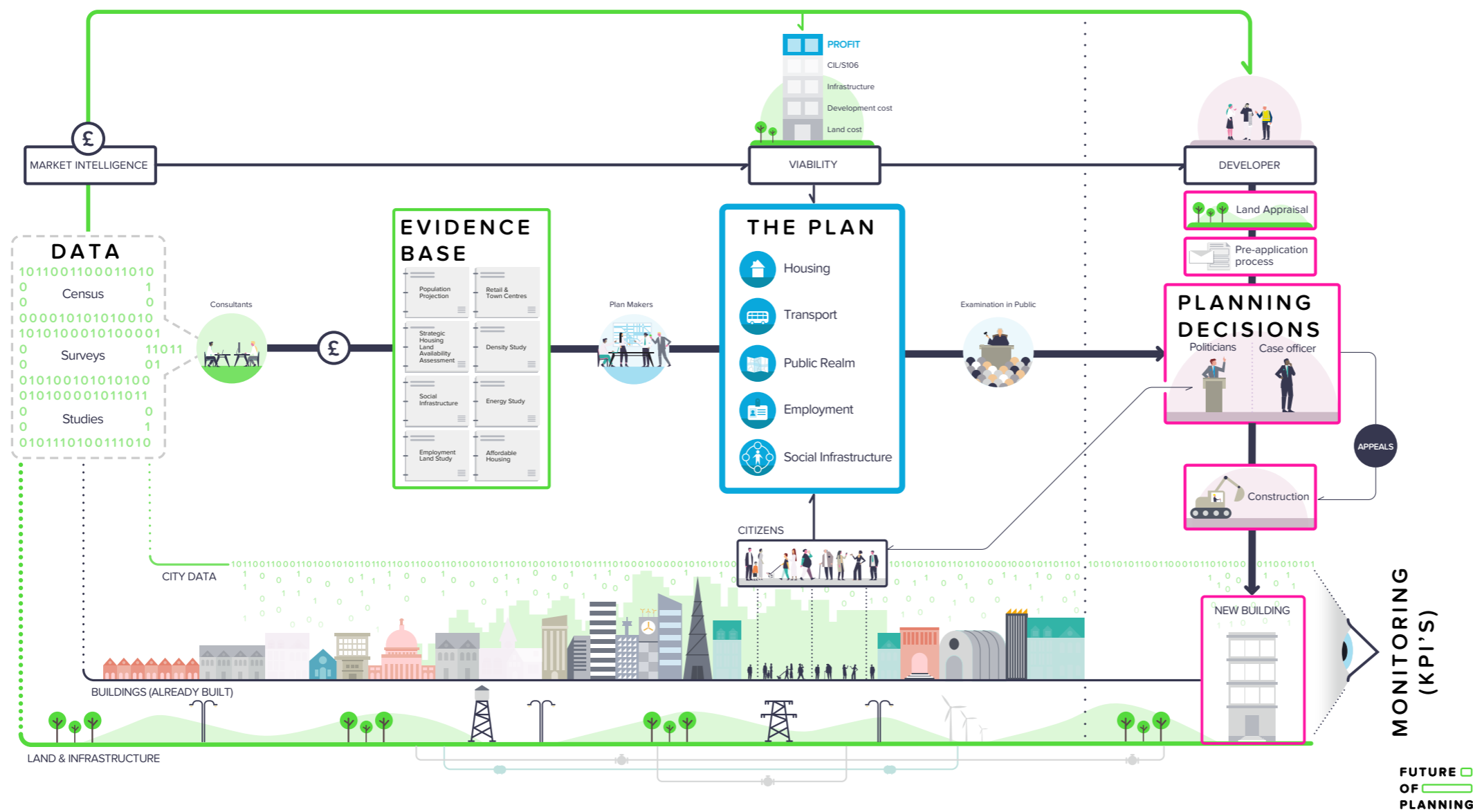
Whilst the UK planning system is distinct, it shares many core components with other systems across the world. Figure 1 below shows how the UK planning system works, with data about the city and its systems being used to create forecasts of how the city may change. This evidence base is used by public planners to assess appropriate policies to incorporate into the city plan, in consultation with citizens and politicians, and consider the viability of new development. Meanwhile, developers can use the data to appraise sites and develop a planning application, which can be more easily tested for fit against the policies in the plan.

Figure 1: The UK planning system ▶

The need for digital innovation in the planning system was brought to the fore by Future Cities Catapult through the Future of Planning programme which began in October 2016.

The Government has demonstrated its commitment to this agenda by launching the Geospatial Commission and through an innovation component of the Planning Delivery Fund. More Recently, the Ministry for Housing Communities and Local Government (MHCLG) has appointed a Chief Digital Officer

PLANNING TODAY



The need for digital innovation in the planning system was brought to the fore by Future Cities Catapult through the Future of Planning programme which began in October 2016. The opportunities for a digital planning system has been acknowledged in both the UK's Housing White Paper and Industrial Strategy.

The Government has demonstrated its commitment to this agenda by launching the Geospatial Commission and through an innovation component of the Planning Delivery Fund. More recently, the Ministry for Housing Communities and Local Government (MHCLG) has appointed a Chief Digital Officer.

As the planning industry recognises the importance of technological innovation it has looked to digital and design industries to understand how they evolve the development of digital solutions. This has led to local planning authorities and planning consultants using methodologies such as hackathons, prototyping and agile design sprints.

Planning authorities in England receive around 450,000 planning applications a year and a typical household application takes between four to seven hours to process.

There are four key areas where digital planning can change how we plan our cities:

1. Data driven planning: The planning system is data rich, with data mined and generated to form the evidence base for local plans and planning applications. Yet this is inaccessible to machines and people, with the use of locked in PDFs prevalent. Open data and APIs could provide a live evidence base, allowing software applications to replace PDFs.

2. Agile planning: It takes at least five years to produce a local plan, meaning it can be out of date by the time its published. With technologies like driverless cars and business models like AirBnB changing how we use cities, more responsive and dynamic digital planning platforms could replace local plans, reflecting the technological, economic and political pace of change.

3. Responsive planning application service: Applying for planning permission is daunting, jargon-filled and potentially expensive. Systems for processing applications are not intelligent, provide little or no feedback to applicants and don't capture data in ways that allow re-use. The identification of common service patterns across local authorities and the application of chatbots and automation to the planning service could improve user experience and enable

more people to build the buildings our cities need.

4. Increasing citizen influence: The planning sector today is not capitalising on the ability of digital technologies to increase understanding of the process and engagement in the system. Use of Virtual Reality and Augmented Reality by architects and developers is beginning to permeate through the planning system and offering new ways to engage the public. Tools such as chatbots and gamification are also starting to be used to better communicate the trade-offs involved in planning. This range of digital technologies should improve the quality and breadth of debate and consultation surrounding new developments.

Below we review current and emerging innovations in each of these four areas. This highlights a mix of technology tools, including those which are in use, under development, or in prototype.

The award of over £1m to digital planning projects by MHCLG will mean more digital planning prototypes, products and services will emerge over the coming months, including:

- Gateshead Council's working prototype of a tool that de-risks the land appraisal and planning process for small developers;
- Gloucestershire Wildlife Trust's

The identification of common service patterns across local authorities and the application of chatbots and automation to the planning service could improve user experience and enable more people to build the buildings our cities need.

development of a 'building with nature' tool to support green infrastructure;

- London Borough of Hackney's minimum viable proposition for a digital service to enable users to submit, view and comment on a planning application;
- Milton Keynes Council's AI chatbot that will answer planning queries and provide access to planning data;
- Sheffield City Council's Integrated Infrastructure Delivery Map and Planning Considerations online map;
- London Borough of Southwark and Wikihouse's 'PlanX', which allows planning guidance and rules to be written as machine-readable code.

Data driven planning

Cities generate and store a wealth of data which can inform evidence bases and viability assessments. GrowthPlanner in Manchester and Belfast is a pioneering example of the use of data science, visualising data on electricity and water networks alongside development sites and constraints so utilities providers and planners can work closely together.

A growing range of data-driven digital platforms are available for the whole industry to use in informing

their activities, from CyclePRINT, which visualises bicycle traffic onto a map of a city, to more complex digital systems such as City Zenith.

The most mature and common place digital technique is building information modelling (BIM). Using BIM, planners can interact with projects at every stage alongside designers, construction companies and suppliers to ensure compliance. BIM also enables interactive engagement with communities allowing planners to consult with citizens on visualisations at the outset of the project and as designs change.

Agile Planning

It takes at least five years to produce a local plan. During that time, significant economic, political, and technological shifts can and will occur. Flexible plans such as Adelaide's open source 3D model can respond to changes and can be adapted as the impact on communities becomes evident.

Loch Lomond and the Trossachs teamed with software company Snook to develop a LIVE Park engagement programme to develop their local plan. This enabled planners to respond to community needs in a project that was shortlisted for an RTPi national award for excellence in planning.

Responsive Planning

Application Service

Through the whole planning industry moving from closed analogue and digital methods to a fully open digital system, the experience of stakeholders submitting and viewing planning applications is improved.

Planning authorities in England receive around 450,000 planning applications a year and a typical household application takes between four to seven hours to process. Around 50% of these are returned to applicants as invalid because they lack the right information or require modifications. Digital technologies are being developed to present the information from a planning application and planning policies in an easy to read and understand format, whilst showing what people have been commenting on and the most popular issues with a development.

The Planning Application Manager (PAM) user experience prototype was the result of a focussed design sprint on improving the planning application process involving Future Cities Catapult, Hackney, Southwark and Camden councils. PAM is a user-friendly, front end system that will serve as an assistant through the planning application process through development management, enquiries and pre-application to submission, to decision and post-decision. This prototype is now being turned into a working software tool by Hackney Council following the award of funding from MHCLG.

Standardising, collecting and re-using data is key to driving innovation in planning across UK. The better use, re-

use and opening of data collected as part of the plan-making and planning application process would enable technology and big data experts to find new insights. As well as unlocking innovation in planning, opportunities could also emerge for other sectors and city services. Sharing of data between planning authorities enables the use of digital tools to provide a better understanding of land supply, infrastructure requirements, planning gain. Data sharing also increases transparency and accessibility, encouraging more citizen involvement.

Data standards are essential to useful, reliable and interoperable data sharing systems. Future Cities Catapult are actively working with MHCLG to develop data standards across all the UK's planning authorities.

Increasing citizen influence

Innovation opportunities exist from bringing emerging technologies across from other industries into the planning industry. For example, VR and AR were predominantly developed in the gaming industry and are now applied in planning and design to better communicate with citizens and engage them in designs and plans. The UrbanPlanAR software developed by Heriot Watt university aims to revolutionise communication and engagement within urban design and master planning by creating a mobile Augmented Reality Platform.

Examples include the 3D Holographic Map viewer Holomaps, and the open-data 3D map from CityGML to provide planning teams with a valuable open and accessible communication tool. One current example in the UK is the creation of a Virtual Reality

model of Thamesmead developed by Hobbs Studio. Not only has this been used by Peabody to engage citizens in their £1 billion regeneration, it's also used as a tool during procurement with potential suppliers able to visualise designs in the model.

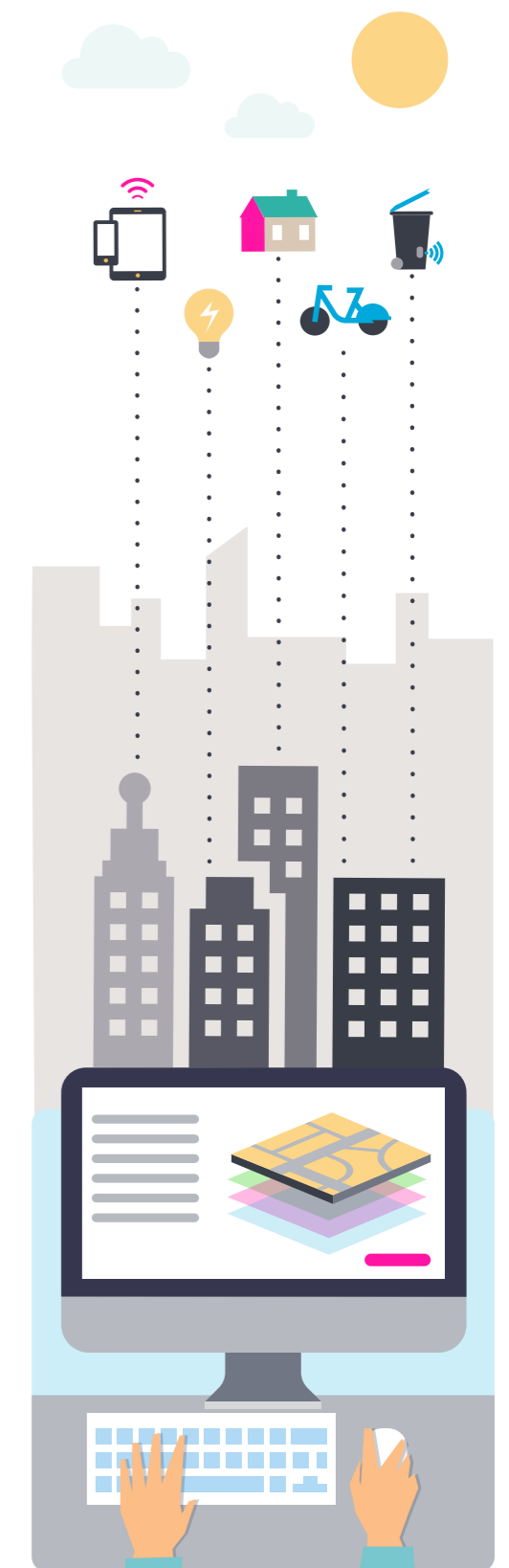
FIND OUT MORE

Future Cities Catapult PlanTech Week 2018 (18-22 June)

Future Cities Catapult are hosting a week of events that will explore how new technology and digital transformation are changing the planning sector and what this means for planners, city officials, real estate owners, and others.

This includes a curated week-long series of free lectures, networking events and interactive installations that will debate and showcase the tweaks and transformations that technology is enabling in the planning system.

To register – please visit : <https://futurecities.catapult.org.uk/event/lunchtime-lecture-plantech-is-scientific/>





Planning for outcomes

Planning policies and developments are often pushed through the planning system for political reasons, with limited robust scientific evidence or understanding of their impact on the built environment and its users.

Over the last decades planning cities has become heavily focused on legal and quasi-legal processes such as development rights, appeals, judicial reviews and public examinations, too often at the expense of its more fundamental role of improving our towns and cities. There is limited effort to learn and measure the impact of policies or developments, or to attempt to better deliver those outcomes most valued by people, such as health, happiness and well-being. Instead, the success of city plans and real estate developments are measured through Key Performance Indicators (KPIs) based on easily observable and measurable outputs, be that the number of homes built or approved or the number of hectares of green space or industrial land available.

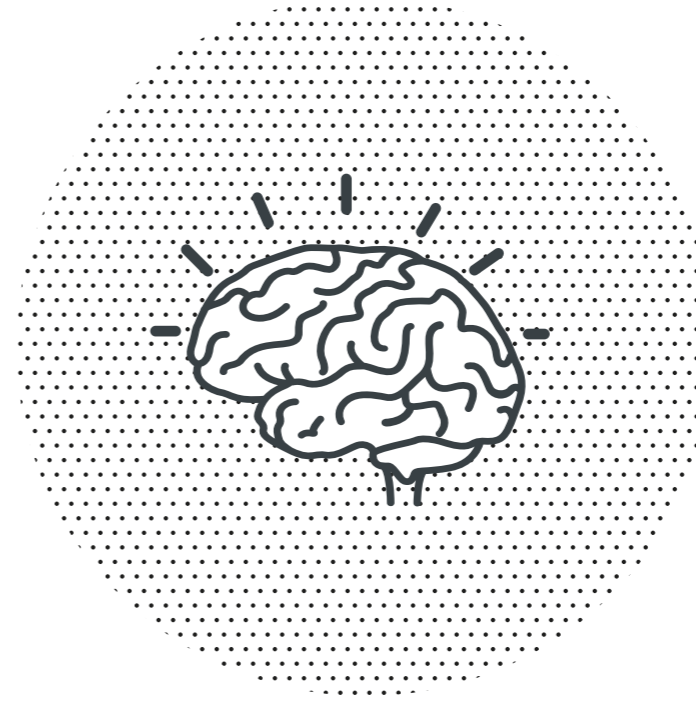
Planning policies and developments are often pushed through the planning system for political reasons, with limited robust scientific evidence or understanding of their impact on the built environment and its users. The evidence which is collected is aimed at supporting decisions in court, to justify predetermined policies or developments rather than to genuinely show an understanding of its impact. This perverse situation means we end up with policies that give weight to

unsubstantiated priorities, such as preventing the building of roof terraces so as not to create noise disturbance - where the former is probably significantly more beneficial to children than infrequent noise is detrimental to health.

Meanwhile urban dwellers are suffering from increased mental health issues associated to poor air quality, environmental stressors such as noise and light pollution, overheating, isolation, increases in obesity, depression and anxiety, all strongly linked to the policies and decisions architects, planners and developers make.

The gap between science and practice in the built environment could previously be blamed on the lack of robust and applicable scientific insights. Most of our understanding came from a small selection of insights gathered through observation or self-reporting psychological studies. Jane Jacobs famously sets out the importance of mixed use, small blocks, density and diversity; William Whyte shows the importance of sunlight in public space, Alice Coleman shows the importance of territory and ownership and Jan Gehl provides an understanding of how public space works. From these insights, good practice emerged, which in turn generates planning policy. However the link between policies and

Mobile EEG machines have the potential to allow us to study how urban environments are perceived in real time and in situ, overcoming the problems often associated with laboratory experiments.



the science is vague, undermining the conviction and confidence of those that implement them and making them easily refutable.

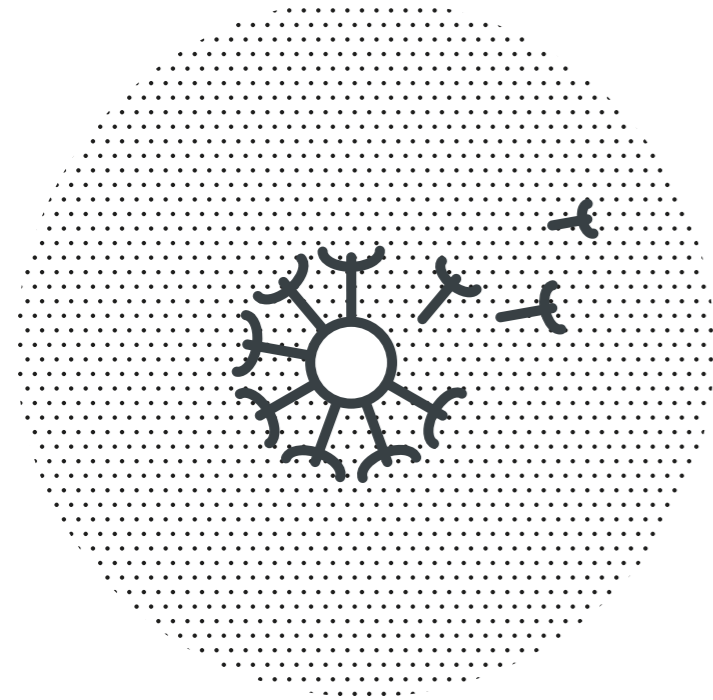
But change is on the horizon. We've recently seen useful insights coming from neuroscientists, such as Collin Ellard's findings on how street-level frontage impacts on people's dwell time, and Nobel Prize winner John O'Keefe's work on understanding neurological aspects of how the human brain navigates through space. These findings mark a turning point, where advancements in technology is giving

us new ways of measuring and studying how the built environment impacts humans and helps develop a much stronger scientific base for how we plan and design it.

Technological progress has driven the miniaturization and affordability of a huge range of sensors which can be easily embedded throughout the built environment. Affordable high definition cameras with image recognition capabilities give us the means to collect a magnitude more data than we have before. Eye tracking technology allows us to study attention, memory, and language to better understand how the environment stimulates our visual fields. Mobile EEG machines have the potential to allow us to study how urban environments are perceived in real time and in situ, overcoming the problems often associated with laboratory experiments. All this new data combined with new methods of analytics, from machine learning to deep neural networks means we will be able to derive significant new insights, and move beyond mere observation and self-reporting as a means to understand the impact the built environment is having on us.

New insight derived by this new science could lead to a paradigm shift in the way we measure the success of how we plan and design our cities.

We can envisage a future where sensors embedded throughout the built environment will provide granular and real time data on the health, productivity and well-being of citizens.



We can envisage a future where sensors embedded throughout the built environment will provide granular and real time data on the health, productivity and well being of citizens; image recognition and sentiment analysis will be able to give us deeper insights on the quality of the human experience; and brain imaging and virtual reality will show us the impact of our designs before they are built. With access to this data, planners and architects will be able to create robust feedback loops between policies and outcomes, enabling the fine tuning of policies to optimise their outcomes.

This is more than just fanciful future gazing. Gehl architects recently developed their Public Life Protocol together with LinkNYC, whose technology is rapidly spreading across cities, allowing a constant stream of data about how people are using public space. Dr. Hugo Spiers, Reader in Cognitive Neuroscience at UCL has been using a virtual game (Sea Hero Quest) to collect data from millions of people navigating in virtual environments to provide insights into how humans of different cultures, ages and abilities, navigate different spatial environments.

Naturally these advancements come loaded with issues from privacy to ethics. How do we build the technologies? Who owns the data? What can it be used for? How is security embedded throughout? These questions need to be addressed now. But in an age where urban footprints globally are growing at twice the speed of urban populations, the need to put in place the mechanisms to learn how to build cities well, is more urgent than ever.

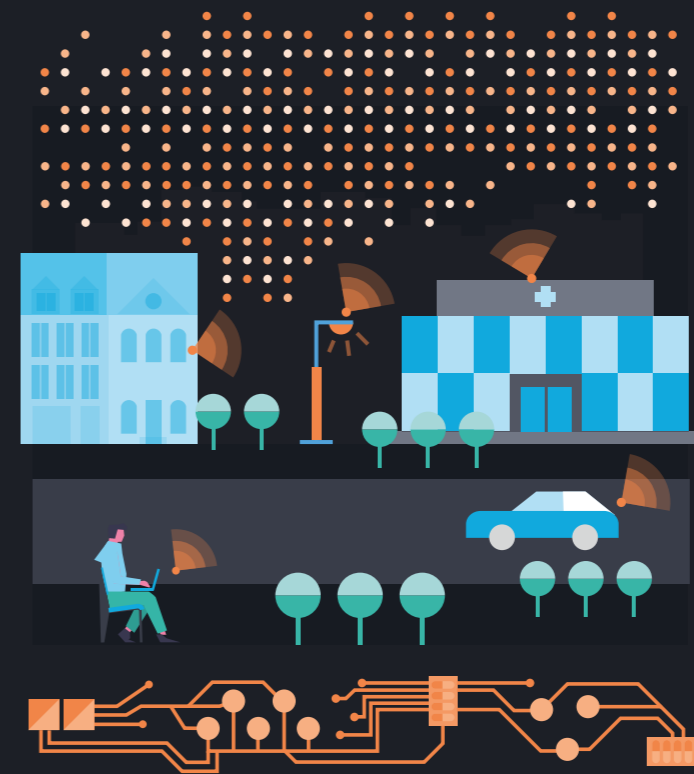
FIND OUT MORE...

*about the work to explore the applications of neuroscience to planning and other city services in our forthcoming **Neuroscience for Cities** playbook launching in July 2018.*

WHAT CAN FUTURE CITIES CATAPULT DO TO HELP?

From Belfast to Belo Horizonte, Future Cities Catapult has helped public authorities, prime suppliers and other buyers of Advanced Urban Services with expert, agnostic, pre-market advice and practical support to engage the innovation ecosystem and tackle thorny urban challenges. We do this through a combination of:

- Research and analysis into current trends and state of the art in advanced urban services
- Insight-driven problem definition, prioritisation and articulation
- Challenge-led innovation open calls that harness the creativity of the market
- Implementable roadmaps to embed innovative approaches into organisations and realise change
- Robust impact evaluation of projects and interventions that unlock further investment



LOOKING AHEAD

The fourth issue of *City Innovation Brief* will be published in August 2018, updating on the trends, issues and opportunities emerging in UK cities as well as presenting a whole year in review.

Our feature article will review how cities are continuing to innovate with Advanced Urban Services, whilst facing the economic challenges posed by aiming to deliver the government strategies highlighted in this issue.

City Innovation Brief is actively looking to crowdsource good ideas and good practice, so please do get in touch if you'd like to contribute to our next brief.

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FUNDING OPPORTUNITY FOR CITIES, SMES AND LARGE BUSINESSES

The opportunities presented by Internet of Things (IoT) enabled solutions and technologies are endless. But places are still struggling to secure the social, environmental and economic value from this new technology, due to lack of standardisation and interoperability between systems. These barriers have made it almost impossible for providers to deploy their innovative services into new cities quickly and easily, and to create scale with deployments across multiple cities.

SynchroniCity has been created to address these barriers.

This initiative brings together a constellation of European cities keen to take advantage of IoT innovation and E3m in funding for businesses large and small to demonstrate the interoperability, replicability and scalability of human-centred IoT-enabled solutions. The result should be a simplified market for new services using IoT technologies and data, helping providers to showcase, sell and scale their solutions in the global advanced urban services market.

SYNCHRONICITY
Synchronicity opens up a global IoT market where cities and businesses develop shared digital services to improve the lives of citizens and grow local economies.

TARGET

- NEW CITIES
- PILOT GROUPS
- SMES & LARGE BUSINESSES

IoT SOLUTIONS

OPEN CALL
1st JUNE 2018

FUND
3M€

CITIES

- Helsinki
- Manchester
- Eindhoven
- Antwerp
- Carouge
- Milan
- Santander
- Porto

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No732240

The open call for proposals is now live (closing 30 September 2018). Learn more about the opportunity on the [SynchroCity website](https://synchronicity-iot.eu). SynchroniCity is a Horizon 2020 initiative by the EU under the [IoT European Large-Scale Pilot Projects](#).



This report was produced by Future Cities Catapult in collaboration with Urban Foresight.