



GUILDFORD
BOROUGH

Making Guildford Smarter

Innovation Strategy 2019/20

Economic Development Team
on behalf of the
Innovation Strategy Board and Climate Change Task Group



INNOVATION AWARD WINNERS 2018



These are the faces of some of today's Innovators in Guildford. Their achievements are detailed below and we hope they will inspire other enterprising businesses and the coming generations of young people now in education to make Guildford even Smarter! We are grateful to our headline sponsor Kyan and all category sponsors for their support:

AWARD CATEGORY	WINNER	SPONSOR
Retail	SaidSo	Experience Guildford
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Healthcare - Human	Trueinvivo	Whiteley Clinics
Healthcare - Animal	The Pirbright Institute	Whiteley Clinics
Voluntary and CSR	Streeva	Guildford Borough Council
Creative Industries	Media Molecule	Charles Russell Speechlys
Emerging Technologies	University of Surrey, Dept. of Chemical & Process Engineering	Interfocus
Young Business	Broadband for Surrey Hills Ltd. (B4SH)	University of Surrey Student Enterprise
Young Innovator	Ben Luxmore	Gold-i
OUTSTANDING INNOVATION	SURREY and BORDERS PARTNERSHIP NHS FOUNDATION TRUST	KYAN

See more at www.guildford.gov.uk/innovationawards

“We cannot solve our problems with the same thinking we used when we created them”.

Albert Einstein

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For further information go to www.guildford.gov.uk/innovationstrategy

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Introduction

We are in the throes of a digital revolution, which is already having a pervasive impact on a global scale. Here in Guildford it is important that we recognise and plan for the huge advantages that the new technologies can bring. The speed of change is such that nobody can accurately predict what the future holds over the next 15 to 20 years. We can only be certain that there will be massive and disruptive transformation. Transportation, housing, energy, health and social care - and the way in which we deliver our public services - are just some of the areas that will be affected.

This Innovation Strategy establishes a Vision for Guildford that embraces a digital future and promotes our town as being at the leading edge of innovation. Our aim is to enable technological change and innovation to support local economic competitiveness, quality of life and public service delivery with a view to creating a vibrant, prosperous, resilient and sustainable borough for the digital age.

Our strategy will promote the development of high-quality infrastructures to support new technologies and systems. We will also raise awareness of how social and technological changes are influencing current and future planning and investment decisions, including the evolution of how we live and work.

Guildford Borough Council is one of many organisations

“We are currently preparing students for jobs that don’t yet exist, using technologies that have not been invented, in order to solve problems we don’t even know are problems yet”.

Karl Fisch 2006

that will influence the development of our borough and much of its work will involve collaboration with partners and stakeholders. The University of Surrey is at the forefront of academic research into many areas of innovation; the Royal Surrey County Hospital is also pioneering research; and Guildford and its surrounds are home to many ground-breaking companies that are leading the way in new digital technologies. The Council has established excellent links in recent years within the academic, research and business communities. We will continue to align our activities to promote cooperation and build on our local strengths.

Our strategy includes delivery of the following three Objectives that expand the strategic priorities set out under the Innovation Theme of the Council’s Corporate Plan (see also pages 7-21 and Appendix 1):

1. Facilitating smart places infrastructure across Guildford

We will seek to promote optimised methods of construction, operation and maintenance as we develop our infrastructure using leading edge technology and new approaches to find efficiencies, co-ordinate activities, and collect and share data to do more with less. We will identify areas where new developments, methods or materials will have a positive impact and plan accordingly. Our aim is to ensure where practicable that the potential for future disruptive changes are taken into account in current planning policies and developments and that digital infrastructure is built into regeneration and new builds. A key part of our approach will be to encourage open source platforms and facilitate open data where possible.

2. Guildford as the Innovators' location of choice

We will promote Guildford as the welcoming location of choice for companies, researchers and developers, who lead the digital revolution, with the Council providing active support for innovation and technological change in order to develop a connected community.

This will include developing awareness and encouragement of opportunities for funding and promoting the development of complementary businesses with a particular emphasis on emerging and disruptive technologies.

What do we mean by Innovation?

Innovation is about . . .

- Inventing something
- Improving an existing product or service
- Doing something in a new and different way
- Enabling changes to the way we live and work

3. Future Guildford - working to improve value for money and efficiency in Council services

We will develop the Future Guildford programme aimed at reorganising our whole Council for the benefit of our residents. We plan to be an exemplar Council with a reputation as an early adopter, embracing modern new ways of working, new materials and new thinking, where cost efficient, beneficial and feasible to do so. We will invest in our IT infrastructure, increasing customer self-service and we will focus on commissioning and commercial opportunities. Our aim is to address issues of duplication and to redesign services to improve delivery and be more efficient. Where appropriate we will adopt innovative approaches with a view to future proofing the organisation.

The Innovation Strategy is described on the following pages and an action plan is set out in detail at Appendix 1. Reflecting the dynamic nature of innovation and its ability to transform our daily lives, our working environments and our natural and built landscapes, this Strategy will need to be organic. **This is reflected in this Strategy's ground-breaking annual format. Deliberately geared to the Council's financial budgeting timetable, ongoing review of**

progress – initially against a limited set of core objectives and related actions – will determine what should be the economic priorities for innovation and investment in future years.

This will be best achieved in dialogue with our stakeholders – for example, members of the public, local businesses, our staff and partners in public sector organisations – whose contributions will help the Council to realise its Vision for Guildford through an adaptable, innovative, sustainable and vibrant economy.



Councillor Gordon Jackson
Chairman
Innovation Strategy Board
Guildford Borough Council

THE COUNCIL'S STRATEGIC FRAMEWORK FOR INNOVATION

Our Corporate Plan

The Vision for our Borough is to be:

- a town and rural borough that is the most desirable place to live, work and visit in South East England
- a centre for education, healthcare, innovative cutting-edge businesses, high quality retail and wellbeing
- a county town set in a vibrant rural environment, which balances the needs of urban and rural communities alike and
- known for our outstanding urban planning and design, with infrastructure that will properly cope with our needs.

The Corporate Plan identifies three fundamental themes and nine strategic priorities that support our vision:

Place-making

- Delivering the Guildford Borough Local Plan and providing the range of housing that people need, particularly affordable homes
- Making travel in Guildford and across the borough easier
- Regenerating and improving Guildford town centre and other urban areas

Community

- Supporting older, more vulnerable and less advantaged people in our community
- Protecting our environment
- Enhancing sporting, cultural, community, and recreational facilities

Innovation

- Encouraging sustainable and proportionate economic growth to help provide the prosperity and employment that people need
- Creating smart places infrastructure across Guildford
- Using innovation, technology and new ways of working to improve value for money and efficiency in Council services

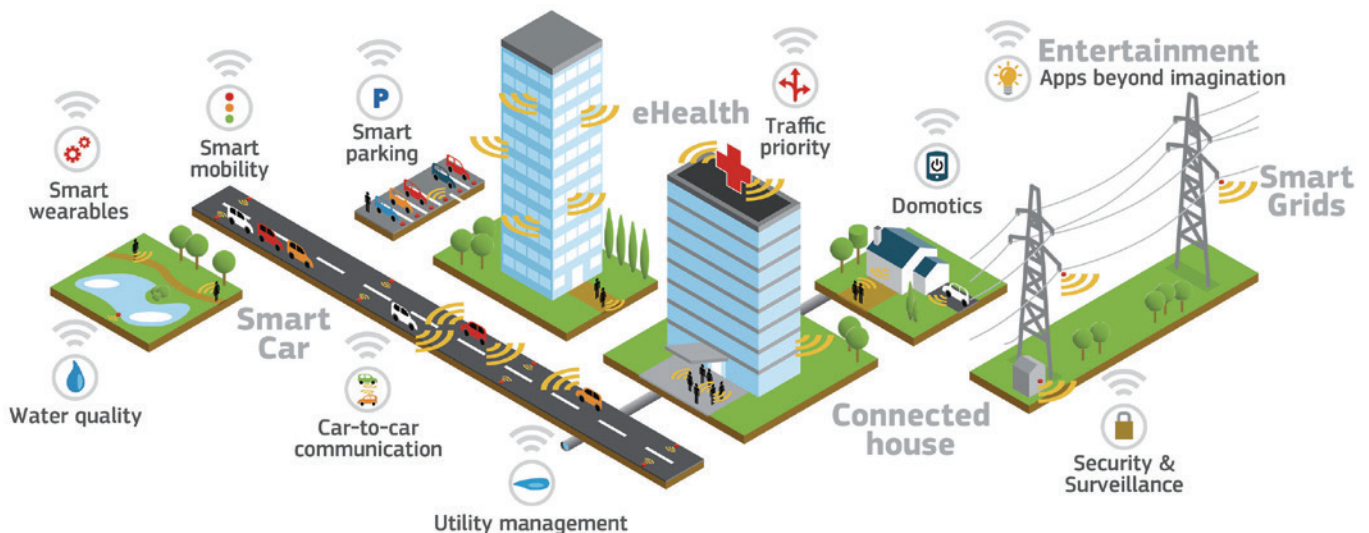
Interaction with Guildford Borough Council Policies

Our Innovation Strategy will complement many of the Council's policies in all of the above areas and we will establish systems and procedures to ensure that opportunities for innovation and transformation are always examined as we pursue the actions set out in our Corporate Plan. This will be led by the Innovation Strategy Board in consultation with members of the Council Executive, all of whose varied portfolios are affected by the ambitions set out in this Strategy.

INNOVATION STRATEGY: CORE OBJECTIVES

Objective 1 - Facilitating Smart places infrastructure across Guildford

Introduction



As indicated in the diagram above, the Smart places infrastructure of the future will touch almost all aspects of our lives. Already we are seeing a revolution in the way that we communicate, in future forms of transport, in the construction and management of buildings and in the availability and interpretation of vast quantities of data. Forward-looking authorities are acting in partnership with telecommunications operators, developers, transport authorities, technology suppliers, energy utilities and others to create an integrated value chain that benefits everyone.

In 2017 the Government published its Industrial Strategy which identified four 'Grand Challenges' to put the UK at the forefront of the industries of the future:

- Artificial Intelligence and the Data Economy
- Clean Growth
- Future of Mobility and
- The Ageing Society.

With these in mind, in shaping our Innovation Strategy we have identified **three key themes**:

- **All Smart places technology requires high speed connectivity through investment in [Digital infrastructure](#)**
- **Developments such as Connected and Autonomous Vehicles and energy efficient vehicles will significantly impact on our [Transport infrastructure](#)**
- **The Internet of Things and innovative building design and management and the need to lower our carbon footprint because of Climate Change will drive a move towards [Smart and Sustainable Living](#)**

Digital Infrastructure

As the world becomes more connected, especially as hardware is miniaturised and hyper-fast connectivity becomes accessible to all, a good digital infrastructure, with high capacity, is increasingly needed to sustain this growing amount of data flowing around.

Key to the success of digital infrastructure is its capacity to anticipate and meet future needs. This Strategy will encourage the future development of fibre networks creating a digital mesh capable of delivering commercial, educational and leisure technologies to individual people and businesses wherever they are located.

Through Broadband Delivery UK (BDUK), the Government is stimulating the telecoms market to invest in more fibre connectivity for homes, businesses and 5G masts. Fast, reliable broadband is now seen as a standard utility and a key factor for house buyers. Better business productivity and future economic growth are more likely to need download and upload speeds of 1 Gigabit per second (1Gbps) or more.

To achieve this and where practicable, the Council will support installation of a 1Gbps symmetrical broadband network that can support future technologies and communication. We will also promote the development of a 5G Communications Network in the town, working with the University of Surrey and others to maximise opportunities to test innovative applications that can improve lives. Our Development Management policies will support this.

The introduction of 5G does not mean that our existing infrastructure will become redundant. A key feature of 5G architecture is that large numbers of low range, low power “small cells” will be attached to buildings and street furniture, such as lampposts and CCTV masts, strategically placing radios closer to users. This will

improve the coverage, capacity and overall quality of experience of mobile users.

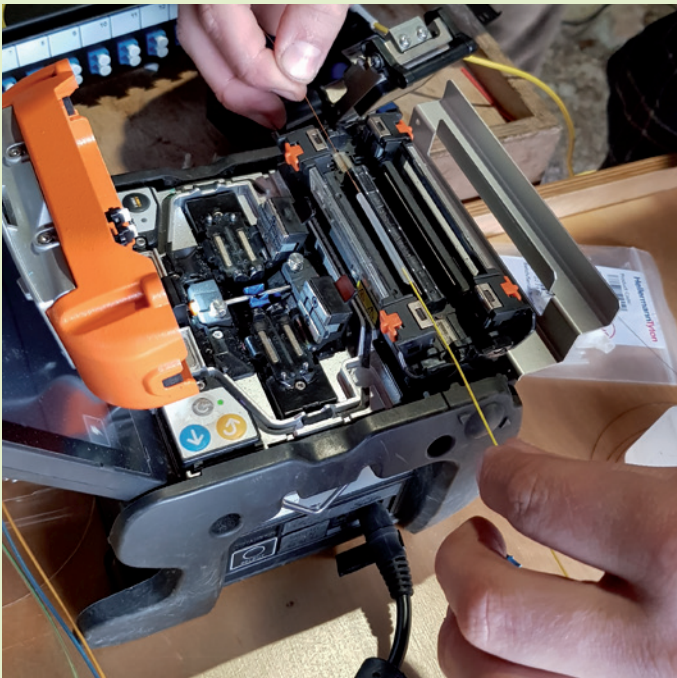
We will also promote LoRa (short for long range), which is a long range, low power wireless platform, together with other smart applications that will solve some of the biggest challenges facing our planet: energy management, natural resource reduction, pollution control, infrastructure efficiency, disaster prevention, and more.

Our infrastructure will enable the SMART City technologies that are already being extensively tested. SMART Cars, SMART Parking, SMART wearables, EHealth, SMART Traffic Management, SMART Home, SMART Utilities, SMART Retail – all of these are becoming a reality. In addition, 3D technology and virtual reality are developing fast and will benefit from the increased speed of 5G. As with any pioneering technology, unforeseen development or deployment issues may need to be managed. To address this, we will produce an innovation risk register to ensure regular review of our strategic aims and revision where necessary.

The retail sector is very important to Guildford. Due to its vulnerability to market dynamics, new retail business models will become increasingly dependent on digital connectivity. There is a growing emphasis on “phygital” technology. As the name suggests, the ‘phygital’ is that which combines both digital and physical experiences to achieve a specific marketing goal. In a retail setting, it typically entails integrating bricks-and-mortar store locations with an ecommerce experience (digital purchase interfaces, catalogues, etc). This may lead to more online transactions at the customer interface, changing the character and purpose of the traditional High Street shop-based business

CASE STUDY 1:

Guildford Borough Council is supporting a local social enterprise, Broadband for Surrey Hills Ltd. (B4SH), in its ambitious project to transform the local economy by installing hyper-fast fibre that will provide symmetric download and upload speeds of 1 Gigabit per second (1Gbps) – far faster than is currently commercially available to rural communities. To deliver the new network as quickly and easily as possible, B4SH uses innovative “soft-dig” installation using a mole-plough and “blown” fibre:



Based on the highly successful Broadband for the Rural North (B4RN) fibre programme, the B4SH project involves farmers and landowners to secure free wayleave access across private land. The Council will facilitate similar arrangements across the land it owns.

Like B4RN, B4SH operates as a Community Benefit Society and welcomes the support of both investors and volunteer workers to install the fibre. For its part, Guildford will work with neighbouring authorities – especially Mole Valley and Waverley – to maximise the progress in laying this important new broadband network.

Transport Infrastructure

Mobility of the future will depend heavily on connected and autonomous vehicles (CAVs). Many vehicles are already connected to their surroundings through sensors and real-time satellite mapping and tracking. Autonomous vehicles are being piloted on some UK roads and local trials of autonomous valet parking have even been undertaken in the Council's car parks. The vehicle of the future is almost certainly going to be driverless and, while the digital transformation of the car and driving experience continues to gather pace, the timeline and technological roadmap remains unclear. A mass of disruptions will unlock personalised and intuitive vehicle experiences of the future, from in-vehicle digital assistants, data analytics and artificial intelligence (A.I.) to cybersecurity.

In the relatively near future, we expect a modal shift in shared mobility and transportation. Mobility as a Service (MaaS) describes a shift away from personally-owned modes of transportation and towards mobility

solutions that are consumed as a service. This is enabled by combining transportation services from public and private providers through a seamless and unified gateway that creates and manages the trip, which users can pay for with a single account. Users can pay per trip or a monthly fee for a limited distance. The key concept behind MaaS is to offer travellers mobility solutions based on their travel needs. Existing technologies are already facilitating ride-sharing, ride-hailing, public transportation and electric bicycles.

The journey of the future will need to integrate multiple modes into a seamless and sustainable mobility experience. With governments across Europe moving fast to outlaw vehicles using the internal combustion engine we need to be ready to accommodate electric vehicles on a large scale if these become the preferred method of powered transport, as well as being alive to other developments such as hydrogen fuel cells that have no carbon emissions. Constant improvements in battery technology mean that extensive charging networks may not be necessary.

CASE STUDY 2:

Nine new fully electric, zero emission buses have been introduced on Guildford's park and ride services.



Surrey County Council and Stagecoach have worked in partnership to bring the single-decker buses, built by Guildford based manufacturer Alexander Dennis, to the town. Not only are the new park and ride buses smoother and quieter, they will be much better for the environment while also bringing an economic boost to the county. Using them will help to reduce congestion and – by reducing vehicle emissions – will help to achieve the key priority of improving air quality. Guildford Borough Council will help the County Council to establish a comprehensive network of electric charging points and launch a drive to reduce pollution around schools.

Our existing transport networks are under severe strain and our Guildford Borough Transport Strategy 2017 recognises the issues and sets out a programme of schemes covering all modes of surface transport in the borough and beyond.

The schemes will, in combination, tackle the historic infrastructure deficit, facilitate a modest modal shift and mitigate the principal transport impacts of future

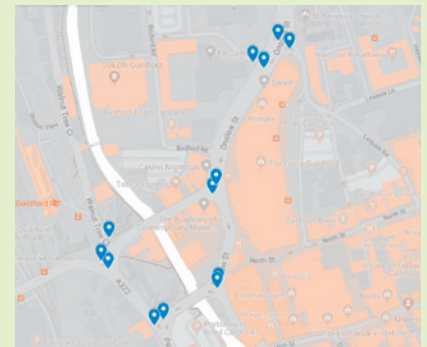
proposed planned growth in our borough.

Our future transport system will be greener, safer and more reliable. However, the disruptive technologies that are now emerging in this area will demand a constant review of our plans and as part of our Innovation Strategy we will support the infrastructure as it evolves, noting and addressing any related potential risks.

CASE STUDY 3:

The Council and the University of Surrey have joined forces with a locally-based business, Epitomical, to pilot Connected and Autonomous Vehicle (CAV) technology as part of Guildford's Smart Cities agenda. The project focused on providing seamless access to networks for CAVs through the generation of data both in-car and from the surrounding environment.

As part of the project the car shown here was driven around the University of Surrey's Guildford campus – but its “driver” was 40 miles away in London, using 5G sensor technology to control the vehicle. The Council has also worked with another Smart Cities company, Vivacity Labs, to secure access to traffic lights for the installation of sensors. The map shows the network of Vivacity sensors located around Guildford town centre, including 9 sensors on the gyratory system in the lower half of the map.



Map source: Google Maps

New traffic management systems will be introduced to support driverless vehicles when appropriate and we will continue to encourage our residents to choose sustainable means of transport. As shown in Case Study 3, our vision is to use the new technologies for the benefit of our residents so as to actively manage the environment of the town centre and the borough as a whole.

Smart and Sustainable Living

Digital technologies and innovation are becoming drivers for better quality of life with the implementation of new and more efficient services for both residents and businesses. Smart and Sustainable Living as a trend involves improved standards in many aspects of daily life, ranging from the home to the workplace.

Building Construction

Within the context of the construction of buildings, the trend can be identified through the development of innovative, quicker, cheaper and more efficient construction techniques and materials. New technologies and the development of advanced cutting-edge materials enable lower resources and construction costs, lower carbon emissions, greater energy efficiency and improved quality of life for users.

CASE STUDY 4:

Peaslake-based Hideaway Concepts Ltd. is developing a new eco/green housing system with potential to re-define the rural economy and help to re-generate local communities.



The prototype accommodation is versatile enough to be living space but perhaps of more interest at a local level is the possibility of the Hideaways as commercial units, for use as rural learning facilities and wellness centres, community infrastructure buildings, at schools and for leisure and tourism. A major UK airport is considering Hideaways for use as acoustically attenuated outdoor learning spaces.

There is also interest from corporates for regeneration projects, including their use in hurricane struck regions where they will provide safe havens, enabling inhabitants to sit out the weather in their own homes.

Internet of Things

The digital infrastructure that this Strategy envisions will facilitate the use of sensor technology to monitor our environment. We have already installed sensors that support an app that enables residents to identify available parking across the town. We are also able to monitor footfall in the town, air quality and flood levels.

With the rapid growth of the Internet of Things (IoT), home automation has become a reality. Many day-to-day systems are already capable of being connected to the internet and each other, from smartphones and computers to our lights, windows, thermostats, water systems and more.

Business Trends

Corporations are increasingly looking to pioneering new technologies to increase employee engagement and expand their market base. Not only is the labour market more frequently characterised by the prevalence of short-term contracts or freelance work (the so-called “gig economy”), as opposed to permanent jobs but work patterns are changing with increased mobility of employees and an ever-growing reliance on digital connectivity.

Ageing Population

The population of Guildford is ageing, as it is across the industrialised world. The prospect of longer lives will require people to plan their careers and retirement differently. This will create new demands for technologies, products and services, including new care

technologies and new housing models. We have an obligation to help our older citizens lead independent, fulfilled lives, continuing to contribute to society.

According to a study by the Community Foundation for Surrey, the fastest-growing age group locally is aged 85 and over, reflecting both medical advances and better promotion of healthy living that mean people can live longer and enjoy active, healthier lives in the process.

Innovation in healthcare already sees home-based treatment and recovery reducing the need for long hospital stays. The roles traditionally undertaken only by doctors are now routinely handled by nurses, pharmacists and other professional health practitioners. There are also GPs, who are beginning to explore the possibilities of patients having online access for consultations.

CASE STUDY 5:

The University of Surrey is a partner in the award-winning Time for Dementia project which aims to personalise education by focusing on the experiences of people with dementia, rather than on their diagnoses. This innovative project transfers the focus of education of health professionals by putting relationships with families at the heart of understanding what is really important in caring for people living with dementia.



Image source: Thickstock

Funded by Health Education England, working across Kent, Surrey and Sussex, the four year collaborative project involves Brighton and Sussex Medical School (Medical students), University of Surrey (Nursing and Paramedic students), Sussex Partnership and Surrey & Borders NHS Foundation Trusts and the Alzheimer’s Society

Other innovations being developed include the principle of “one health”, which recognises that the health of humans, animals and ecosystems are interconnected. It aims to improve health and well-being by applying a coordinated, collaborative, multidisciplinary and cross-sectoral approach to address potential or existing risks that originate at the animal-human-ecosystems interface.

Such a holistic approach to health hazards will lead to a systemic change of perspective in the management of risk and the Council will support its local business and research communities in the development and delivery of these transformative innovations.

Climate Change and the Circular Economy

As the Council has recently acknowledged, there is overwhelming evidence indicating that human activity has resulted in global climate change that threatens our future and those of generations to come. It is clear that we must all take significant steps to address our lifestyles immediately in order to slow and, in time, reverse this damage. In our position as a local authority, we have a crucial role to play in both leading by example and influencing the way that the residents and businesses of Guildford Borough live and work. We cannot expect residents to change their habits if we are not prepared to lead by example in the fight against climate change, for the sake of everyone in the borough both now and in the future. We have therefore established a Climate Change Task Group, which will draw on expert external advice to provide informed policy input and practical suggestions on issues that we can and should be addressing going forward. The Group has developed a framework that will form the basis for its future deliberations. This is set out in full in **Appendix 2**.

In summary, our aim is to promote sustainable smart living to ensure that our communities benefit from clean air, a natural and healthy environment, power resilience, minimal flood risk, and that everybody is aware of the risks of climate change, including the ways in which its effects can be reduced or removed completely. The Council will lead by example and have particular regard to the new technologies in the delivery of its services and the management and development of its properties, giving internal priority to innovation and carbon footprint throughout the organisation.

We support and will actively promote the **United Nations' 17 Sustainable Development Goals of the 2030 Agenda for Sustainable Development**, which aim to mobilise efforts to end all forms of poverty, fight inequalities and tackle climate change, while ensuring that no-one is left behind.



See **Appendix 3** for more information about the related national and regional strategies that provide the context for this Innovation Strategy.

CASE STUDY 6:

In 2018 leaders of the Council attended a conference hosted by Guildford's twin city of Freiburg im Breisgau (pop. 220,000) that included a focus on the EU Circular Economy Package, adopted by the European Commission in December 2015 as a key milestone on the road to a low carbon, resource-efficient future.

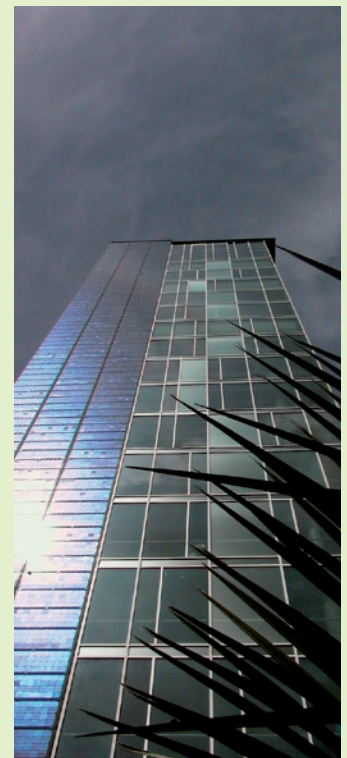


The circular economy is the most important deliverable of the EU's Roadmap to a Resource Efficient Europe, which sets out a vision for the structural and technological changes needed to transform Europe's economy into a sustainable one by 2050.

The European Commission's view is that Europe needs to move away from a 'linear' economic model that is resource-intensive and unsustainable towards a more 'circular' approach, where the value of products, materials and resources is maintained in the economy for as long as possible and the generation of waste minimized.

Arranged for its twin towns and cities around the world, Freiburg's conference was helpful in demonstrating that this transition to a more circular model is an essential requirement to ensure a sustainable, low carbon, resource-efficient and competitive global economy.

See **Appendix 5** for details about Freiburg's adoption of the circular economy.



Objective 2 - Guildford as the Innovators' location of choice

The Council will promote Guildford as the welcoming location of choice for companies, researchers and developers, who lead the digital revolution. To help develop a connected community we will support innovation and technological change aimed at developing awareness and encouragement of opportunities for funding and promoting the development of complementary businesses, with a particular emphasis on emerging and disruptive technologies.

For this Objective we have identified **four key areas of focus**:

- **Promoting Clusters** in partnership with the University of Surrey and local businesses that are naturally forming as a result of Guildford's dynamic digital economy.
- This approach will reinforce our aspiration to be **A Collaborative Community**
- We are committed to **Communicating our Strengths** as Guildford's innovation community, through targeted marketing and the promotion of networks and events that enable an environment where information on technological advancements is shared for the benefit of all.
- The Council, Enterprise M3 LEP and the University each provide a wide range of **Business Support** for local companies, especially start-ups and scale-ups. This will develop through our partnership links.

Promoting Clusters

Guildford Borough is home to a number of innovative clusters, full details of which are set out in **Appendix 4**. The Borough is ideally situated close to London and within easy reach of both Heathrow and Gatwick airports. Businesses and researchers alike are attracted by the wealth of talent that Guildford has to offer and the quality of life that can be enjoyed in one of the leading retail and cultural centres of the South East only a few miles from the Surrey Hills Area of Outstanding Natural Beauty.

Several organisations contribute to our leading position as a location of choice for innovation. The Surrey Research Park is home to over 170 companies, which employ around 4,500 employees, a significant proportion of whom are in highly technical jobs. In 2017-18 the Surrey Technology Centre, which specialises in incubating technology businesses, supported 148 companies with a collective turnover of £16.6m and 444 employees. SETsquared Surrey has helped to accelerate over 165 early stage, high-growth technology businesses since 2002, with 75% still trading and over 90% surviving 3+ years.

The Council will continue to work with its partners to promote our clusters and Guildford's position as one of the leading centres of innovation in the UK.

Key Innovation Clusters

Of particular note in our leading digital economy are the space, digital gaming, 5G communications and digital health sectors. Here we look at Space and Gaming:

Space: To drive the fast-growing space economy in the UK, the £4.8 million SPRINT (Space Research and Innovation Network Technology) programme seeks to engage 400 small and medium-sized enterprises (SMEs) in the UK, provide support to 150 of those over three years and deliver +£70 million Gross Value Added (GVA) and 500 jobs in support of the UK space sector growth strategy. The SPRINT funding is part of an investment of £67 million through Research England's Connecting Capability Fund in new collaborative projects to drive forward world-class university commercialisation. The five SPRINT core partners are the Universities of Edinburgh, Leicester, Southampton, Surrey and the Open University. Other partners involved include the UK Space Agency (UKSA), SAC, Seraphim Capital, Surrey Satellite Technology Ltd (SSTL) and the Science and Technology Facilities Council.

Gaming: Since computer games companies like Bullfrog and Lionhead Studios set up in Guildford in the late 1980s and early 1990s, the town has attracted further artists and developers in this field, earning it the informal title of "The Hollywood of Gaming". This has been accelerated by the presence of major companies like Electronic Arts (EA), Kuju Entertainment and Media Molecule, with over 70 companies now employing over 1000 people locally. Guildford attracts and develops industry experts that can bring research ideas and concepts into fruition, contributing billions to both the UK economy and our society. With the key elements to develop a tech hub combined with huge existing success stories, the town will only continue to thrive as a world-leading centre for innovation.

A Collaborative Community

Our ambition is to create a connected and collaborative community, which is recognised as a base from which to pilot innovative ideas. New areas that are rapidly developing include artificial intelligence, blockchain, cyber security and connected and autonomous vehicles. This spirit of collaboration is epitomised by our relationship with the University of Surrey. Our shared innovation goals and aspirations bring both organisations into contact with local businesses and other partners in the private, public and social sectors. This translates further into international collaborations involving both partner Universities and towns and cities similar to Guildford. As mentioned above in 2018 our German twin town, Freiburg, hosted an international conference on the Circular Economy attended by its 12 'twin' cities around the world, including Guildford.

The University puts great emphasis on connecting people with ideas, students with opportunities, and businesses with technologies.

The Council will continue to foster its links with the University to ensure that the many benefits of a Guildford research base are realised and reinforced by a task force comprised of the Council, the University and the local Business community. Other major partners include the Royal Surrey County Hospital and Guildford and Waverley Integrated Care Partnership, Enterprise M3 Local Enterprise Partnership, Surrey County Council and other local Boroughs and Districts.

“Collaboration begins with connections we make in our community, supporting projects that make a difference locally, and extends to our global partnerships which are enabling transformative research into areas such as 5G, cancer treatment and sustainable tourism.”

Professor G Q Max Lu AO DL FAA FTSE
President and Vice-Chancellor
University of Surrey

Communicating our Strengths

A key part of our strategy is active communication of the strengths of Guildford's innovation community through targeted marketing, network promotion and the organisation of events.

To achieve that we will build on the Council's existing economic development activities that focus on innovation under the banner of Innovate Guildford, in particular the one-day Innovate Guildford Science and Arts Festival each Spring and the annual Innovation Awards held nearer Christmas.



Both of these major events help to create a creative and inspiring environment in which information on technological advancements is shared for the benefit of all those in the borough, including the Council and its services.

Through this Innovation Strategy the Council will seek every opportunity to raise public awareness of innovation, both through its own marketing channels and in collaboration with the local business community and the various touch-points within the University of Surrey which is, of course, one of Guildford's largest employers.

For its students, the University's Professional Training placements are built on a long heritage of sandwich degrees that give students a valuable head start when looking for graduate jobs. Programmes such as Knowledge Transfer Partnerships and PhD projects provide business innovation opportunities that can benefit both students and the businesses they work with.

The University of Surrey and the Council have been close operational partners since the 1960s and this Strategy reinforces the many strengths that have made this such an enduring relationship.

The Council's current academic and research staff contacts at the University of Surrey include staff in the following departments:

- 5G Innovation Centre
- Centre for Environment and Sustainability
- Surrey Business School:
 - o Centre for Management Learning
 - o CoDE: Centre of Digital Economy
- School of Health and Social Care
- School of Hospitality and Tourism Management
- School of Veterinary Medicine

Business Support

The Council has a number of established touch-points with Guildford's businesses. A very large proportion of our entrepreneurial businesses are SMEs and the Council will continue to build on our extensive and well-established programme of business support including the Guildford Business Growth Programme delivered by the BE Group.

One of the more important collaborations in recent years took place in 2017 when the Council joined Business South as a member of its established and successful Champions programme.

Business South was established in 2007 to be the independent representative of businesses in the South of England. Its aims are to unite businesses, to gain strength from this collaboration, and to use the programme to make a difference in both individual organisations and the wider economy. Since its foundation, Business South has worked through its Champions to promote the area; demonstrated the importance of key sectors; provided invaluable thought leadership; influenced policies and investment decisions and delivered on a range of projects.

This fits with Guildford Borough Council's ambition to support a sustainable economy within the context of its Local Plan, working to maintain and improve the area's infrastructure and connectivity as well as engaging with key employers and SMEs to ensure their needs and concerns are recognised.

Objective 3 - Future Guildford - working to improve value for money and efficiency in Council services

The key stakeholders involved in delivery of this Objective are the Council's public customers, local businesses and council employees. Through the quality of its relationship with each group, the Council will, through this Strategy, support commercial, environmental and social change to exemplify best practice in civic affairs and further enhance the Borough's reputation as a leading and innovative local authority. An important part of our approach will be to establish processes whereby we "think outside the box", giving particular thought as to how we can do things better by exploring new technologies. We aim to be an exemplar council, with a reputation as an early adopter, embracing modern new ways of working, new materials and new thinking, where cost efficient, beneficial and feasible to do so.

Future Guildford

As customer expectations continue to change and challenging financial pressures remain for the foreseeable future, the Council has identified a number of changes needed to its systems, structures, services and culture. Through a planned, phased approach and by looking at the whole range of Council activities, Future Guildford will aim to:

- improve our services and customer care
- future-proof our organisation
- modernise our services and systems
- make us more efficient
- deliver savings and address our financial challenges
- create an environment where there are better development opportunities for staff
- develop our culture into one that collectively adapts and changes to address the various challenges and issues ahead.

Key to Future Guildford will be investment in new technology that gives the opportunity for new ways of working, encouraging channel shift and improved efficiency among staff. Our aim is to harness innovation so as to effect an ambitious transformation programme based on a Business Case that weaves together commercialisation, commissioned spend reviews and strategic realignment.

Open by Default

An important function of the Council is the generation, management and sharing of data. Data is frequently referred to as "the new oil", because of its value in economic growth and performance, so there is an obvious need for protocols to be applied to the holding and use of data.

Open by Default, as widely used in the contexts of Open Government and Open Data, is the principle in which government makes its data accessible to the public by default, unless there is a sufficient justification to explain that greater public interest may be at stake, as a result of disclosure. Since the principle empowers the public's right to know and capacity to oversee government activities, it is closely associated with government transparency, civic engagement, and e-governance in organising public life.



The qualifications under Open By Default, as proposed by the International Open Data Charter, are roughly as follows:

- Data that are open must be government data and have significant benefit to the public
- Government data should be made accessible, clearly communicated, and usable without restriction for the public
- Government should promote the open data practices
- Disclosure of government data should not infringe citizens' privacy
- Government will develop and adopt policies and practices to ensure all government data is made open; provide clear justifications as to why certain data cannot be released; establish a culture of openness; develop leadership, management, oversight, performance incentives, and internal communication policies necessary in all government departments and agencies; observe and update appropriately domestic laws and internationally recognised standards regarding security, privacy confidentiality, and intellectual property; anonymise data at its disclosure, to ensure that sensitive, personally-identifiable data are removed in accordance with privacy legislation and standards

The Council is committed to reinforcing these principles, potentially as signatory to a Local Digital Declaration. Such a declaration could affirm our collective ambition for local public services in the internet age, and our

commitments to realising it. In line with the aspirations embodied in the Future Guildford review, a Local Digital Declaration could involve working on a new scale to:

- design services that best meet the needs of citizens
- challenge the technology market to offer the flexible tools and services we need
- protect citizens' privacy and security; and
- deliver better value for money

Anticipating and delivering Change

During 2019/20 we will use this new Innovation Strategy to focus on those Actions that will support all future deliverables – not simply the three main Innovation Objectives. To do that and wherever practicable we will apply to each situation one of the following principles, namely that the Council will support:

- invention, production and development of new goods and/or services
- improvements to an existing product or service
- lateral thinking in decision-making to solve an established problem or challenge
- positive and proactive attitudes to external challenges, including assessment of potential risk and readiness to embrace change

Our Future Guildford review provides an early opportunity for the Council to innovate by example.

Appendix 1: 2019/20 Action and Delivery Plan

By definition, innovation constantly changes and evolves, a dynamic that is reflected in this Strategy's ground-breaking annual format. Deliberately geared to the Council's financial budgeting timetable, the Innovation Strategy Board will review progress – initially against a limited set of core Objectives and related Actions – to determine what should be the economic priorities for innovation and investment in future years. The Board will commission Position Papers to inform, deliver and review each Action.

Objective 1: Facilitating smart places infrastructure across Guildford			
Actions	Delivery Mechanism	Key Partner(s)	Outcome
1. Digital Infrastructure	Facilitate the introduction of a Local Full Fibre Network including Development Management Policies to promote installation of 1Gbps Symmetric broadband	Broadband for Surrey Hills Ltd. (B4SH) and other external partners; GBC Planning and developers	1Gbps fibre broadband the default provision, whether in street ducts or soft-dug moleplough furrows
	Undertake detailed mapping of existing fibre provision and availability of ducts owned/ controlled by the Council and other authorities	GBC IT team and counterparts in neighbouring authorities where necessary	Identification of duct provision and public buildings able to support broadband, LoRa and WiFi to extend connectivity
	Extend fibre broadband network into Mole Valley DC and Waverley BC	Broadband for Surrey Hills Ltd. (B4SH) and both local authorities	Extension of fibre south and east from Albury/A25; new subscribers
	Develop Internet of Things (IoT) platform through joint venture partnership to deliver town centre WiFi and related LoRa (long range) technology	University of Surrey 5G Innovation Centre, Experience Guildford BID (Business Improvement District), Surrey County Council plus other partners	Free WiFi service; faster connectivity and IoT applications
2. Transport Infrastructure	Support/promote integrated travel: Sustainable Movement Corridor; traffic sensor technology; bus/bike/walk options; Mobility As A Service	University of Surrey, RSCH, Integrated Care Partnership, Experience Guildford BID, Surrey County Council, and local specialist contractors; GBC Major Projects Team	Reduced congestion and improved air quality leading to healthier lifestyles; greater use of new fuels (electric and/or hydrogen) and Connected and Autonomous Vehicles (CAVs)
3. Smart and Sustainable Living	Support Climate Change Working Group in accordance with Framework outlined in Appendix 2	Guildford Environmental Forum, and external experts; GBC Planning, Environmental Health, Housing	Better awareness of climate change, global warming and sustainability issues; greater engagement with GBC colleagues to secure delivery
	Ensure Development Management Policies in Local Plan promote smart and sustainable techniques and standards in relation to housing; energy; environment; infrastructure	University of Surrey, Business communities, Rural Economic Strategy partners (e.g. Country Land and Business Association; Surrey Community Action)	All partners and GBC colleagues committed to innovation as the underlying principle to support all developments and related processes
	Council to lead by example in promoting and deploying smart technology to deliver GBC developments	All GBC Departments	All GBC staff empowered by use of smart technology (with skills training as required)

Objective 1: Facilitating smart places infrastructure across Guildford

Actions	Delivery Mechanism	Key Partner(s)	Outcome
3. Smart and Sustainable Living <i>(continued)</i>	Innovation Strategy Board to be responsible for continuous horizon scanning in relation to emerging trends so as to ensure Council is taking these into account and improving services to residents	Board Members and related GBC departments and roles, especially through external relationships (e.g. other authorities and key sector businesses)	Greater awareness of innovators, best practice models and sector centres of excellence

Objective 2: Promoting Guildford as the Innovators' location of choice

Actions	Delivery Mechanism	Key Partner(s)	Outcome
4. Promoting Clusters	Facilitate innovation and development of Gaming and Digital Health sectors	Enterprise M3, Local Enterprise Partnership, University of Surrey; G3 Futures group of companies	Exemplar tri-partite collaborations on which to model future clusters
	Development of local digital economy	CoDE - Centre of Digital Economy (University/Surrey Business School)	Better awareness and understanding of global economic infrastructures
5. A Collaborative Community	Formal agreement with University of Surrey and Surrey Business School to develop joint economy and innovation partnership	University of Surrey Executive; Surrey Business School; Surrey Research Park; SETsquared Partnership	Signed Memorandum of Understanding to include reference to collaborative links with local business community
	Develop established links with Enterprise M3 Local Economic Partnership, Growth Hub, Innovation South and others	Enterprise M3 LEP and subsidiary or associate bodies	Enhanced proactive leadership at local level, enabling GBC to exemplify best practice
6. Communicating our Strengths	Promote Guildford's leading role in relation to innovation to spread understanding, influence Council decision-making and encourage behavioural change e.g. through Innovate Guildford, Awards, etc. Enhancing the reputation of Guildford with business journalists, researchers and investors	GBC PR and Comms Team and Economic Development Business Bulletin; development of joint communications partnership with the University of Surrey and private sector will help generate further publicity	Raised public and staff awareness of innovation principles and their relationship to individual work-life situations
7. Business Support	Provide incubation, innovation and skills support for business start-ups, SMEs and larger corporates, in conjunction with FE/HE partners and business community	Enterprise M3 Growth Hub, University of Surrey, Surrey Research Park, SETsquared partnership and business mentors	Enhanced culture of enterprise, innovation, leadership and skills. Mapping of R&D spend and patents in the local economy

Objective 2: Promoting Guildford as the Innovators' location of choice			
Actions	Delivery Mechanism	Key Partner(s)	Outcome
7. Business Support <i>(continued)</i>	Facilitate the development of an Innovation Hub in the Town Centre, through established links with commercial agents and/or development partners	Enterprise M3 Growth Hub, University of Surrey, Surrey Research Park, SETsquared partnership and business mentors	Suitable permanent premises identified and developed
Objective 3: Future Guildford – working to improve value for money and efficiency in Council services			
Actions	Delivery Mechanism	Key Partner(s)	Outcome
8. Future Guildford	Support Future Guildford transformation programme	GBC departments; external supply partners/service providers where appropriate	Smooth, successful delivery of Future Guildford programme
9. Open by Default	Review viability of Council becoming a signatory of a Local Digital Declaration, including implications of open vs. closed data sharing with neighbouring local authorities and strategic partners	Surrey County Council, Highways England, Network Rail	Explore use of open innovation techniques with local technology companies as part of Future Guildford roll out
10. Develop an Innovation Strategy Risk Register	Regular review by Innovation Strategy Board to identify and address risks to delivery of Objectives / Actions	GBC departments; external supply partners/service providers where appropriate	Early warning of potential threats to delivery of Strategy

Appendix 2: Climate Change Task Group Framework

Why do we need a Climate Change Strategic Framework?

As the Council has recently acknowledged, there is overwhelming evidence indicating that human activity has resulted in global climate change that threatens our future and those of generations to come. It is clear that we must all take significant steps to address our lifestyles immediately in order to slow and, in time, reverse this damage. In our position as a local authority, we have a crucial role to play in both leading by example and influencing the way that the residents and businesses of Guildford Borough live and work.

The Climate Change Task Group (CCTG) recently established by the Council has agreed that there are a series of important plans that need to be developed to help Guildford Borough to achieve our ambition of reducing our carbon emissions and adapting our town, villages and surrounding countryside to future climate changes.

This framework describes our ambition and sets out what we need to do next to develop our plans and to measure and manage our activities over the long term.

The Policy Context - Climate Change and Global Warming

In July 2017 the UK Government's National Infrastructure Assessment set out three priorities for national infrastructure – tackling congestion, lack of capacity and carbon emissions. In October 2018 the Intergovernmental Panel on Climate Change (IPCC) published a special report concluding that human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels and that global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate. The key message is that climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase

“What we do now and in the next few years will profoundly affect the next few thousand years”.

Sir David Attenborough – speaking at World Economic Forum, 2019

with global warming. In January 2019 the Government published its Clean Air Strategy, the provisions of which will be addressed as part of the Climate Change Strategic Framework.

Our Aims and Vision

Across the world, cities and local government leaders are beginning to take radical measures to tackle climate change. The key steps taken include decarbonising the electricity systems, optimising energy use in buildings, providing cleaner and affordable alternatives to cars, and cutting waste while increasing recycling. CCTG agrees that Guildford should be at the forefront of this movement.

Our aim is to promote sustainable smart living to ensure that our communities benefit from clean air, a natural and healthy environment, power resilience, minimal flood risk, and that everybody is aware of the risks of climate change, including the ways in which its effects can be reduced or removed completely. The Council will lead by example and have particular regard to the new technologies in the delivery of its services and the management and development of its properties, giving internal priority to innovation and carbon footprint throughout the organisation.

Our target would have to be set at a level that is achievable, but becoming a net zero carbon borough by 2040, might be a suggestion.

What do we need to do?

Priority Areas

CCTG considers that the development of our strategy should focus on the following priority areas:

Housing and Domestic Emissions

Well over a quarter of carbon emissions are attributable to the domestic sector. There are three main elements to tackling the issue:

- through the build standard of new homes and alterations to existing homes;
- through improving the standards of existing homes; and
- through working with residents to change their patterns of energy consumption, low carbon energy generation and renewable energy.

Economic Development, Commerce and Industry

It is anticipated that a significant amount of the borough's carbon emissions is generated through economic activity. CCTG recommends that the Council engages with businesses and other stakeholders to:

- encourage businesses to commit to new environmental actions;
- participate in raising the awareness of their employees regarding climate change risks and mitigation strategies;
- develop a network for shared environmental best practice in the borough; and
- review the implications of moving towards a low carbon economy on Guildford's jobs and skills markets.

Transport

It is estimated that about 20% of CO₂ emissions in the borough are attributable to transport related activities. The principal activities that can be undertaken to tackle this are:

- reduce congestion so as to reduce emissions from static traffic;

- support the development of infrastructure to allow the delivery of more fuel-efficient and lower carbon movement and new emerging technologies to encourage modal shift so that travellers move away from private cars towards other greener forms of transport for example buses, cycling and walking; and
- support fuel-efficient vehicles and the development of electric vehicles in the short term and cars powered by cleaner technologies (e.g. hydrogen fuel cells) in the long term. To achieve this transport needs to be integrated into the energy system with an emphasis on making available alternative fuels so that the supply chain is not interrupted.

Agriculture

Agriculture both contributes to climate change and is affected by climate change. A significant decline in livestock numbers, more efficient application of fertilisers and better manure management reduced the UK's emissions from agriculture by approximately 15% between 1990 and 2015 but we still need to do more and adapt our food-production system to cope with climate change.

Before reaching our plates, our food is produced, stored, processed, packaged, transported, prepared, and served. At every stage, food provisioning releases greenhouse gases into the atmosphere. Farming in particular releases significant amounts of methane and nitrous oxide, two powerful greenhouse gases. Methane is produced by livestock during digestion. It can also escape from stored manure and organic waste in landfills. Nitrous oxide emissions are an indirect product of organic and mineral nitrogen fertilisers.

Given the central importance of food in our lives, further reduction of greenhouse-gas emissions from agriculture remains quite challenging. Nevertheless, there is still potential to reduce further the greenhouse-gas emissions linked to food production. A better integration of innovative techniques into production methods, such as capturing methane from manure, more efficient use of fertilisers, and greater efficiency in meat and dairy production (i.e. reducing emissions per unit of food produced) can help.

Adaptation

CCTG recommends that we develop our understanding of the anticipated impacts of climate change so as to identify potential vulnerabilities caused by extreme weather events, such as storms, flood and hot and cold weather extremes. We should also identify the impact of increased average temperatures on the environment and our residents with a view to encouraging behavioural change. Not all changes will be bad, and we should also plan for the opportunities that a milder climate might provide. For example, it is likely that our rapidly developing wine industry will lead to increased tourism in the area. There will also be a big opportunity for a green economy associated with the University of Surrey and others.

Primary Activities

CCTG have identified the following activities that need to be coordinated to maximise the reduction of carbon emissions throughout the borough:

Planning

Buildings account for about a quarter of carbon emissions. We will develop bold planning policies on new development, while being mindful of the potential for rising temperatures and the need for the planning process to drive a significant reduction in carbon emissions and a net gain in biodiversity. Alterations to existing buildings will be subject to stringent building regulation controls.

Aspirational policies can encourage applicants to focus on excellent energy efficiency standards and flood risk planning. Where it is feasible to do so, the Council should also promote new materials that can aid carbon capture, and renewable energy generation.

We should also ensure that our policies encourage planting schemes that promote carbon capture and improve placemaking. One tree can absorb as much as 48 pounds of carbon dioxide per year from maturity at 15 years and will have sequestered 1 ton of carbon dioxide by the time it reaches 40 years old. We should seek to establish a mechanism for medium and long-term carbon reduction using new and available technologies.

Planning can also require businesses to develop low carbon travel plans and make it easier not to use cars for all their employees.

Communities and Neighbourhoods

CCTG recommends that the Council supports communities acting together to improve their neighbourhoods, save money on energy, promote the “reduce, re-use and recycle more” campaign and support each other to take action, thus becoming friendlier, happier places to live.

We should develop low carbon branding and:

- maximise opportunities to consult and involve local people including Parish Councils, residents’ associations and neighbourhood forums so that they are prioritising energy efficiency as part of their general activities;
- engage with the Third Sector, who can assist in encouraging communities towards responsible and energy efficient decision making;
- direct resources towards community engagement and behavioural change; and
- prioritise working with schools as it is our children and grandchildren who will be most affected by the changes needed in the future.

Energy and Water Supply

CCTG considers that a high priority should be given to ensuring that every opportunity is taken to promote the introduction of renewable and low carbon energy. We also need to have a better understanding of energy use and consumption patterns across the Borough. The Council needs to work with our partners in local government and the energy supply sector to:

- consider the establishment of renewable energy generation and district energy networks or similar systems;
- plan for meeting increased demand; and
- encourage end-use energy efficiency improvement (e.g. through more efficient appliances and lighting).

Climate change will further impact on our water supply, which is already under stress. The Council will work with relevant partners to plan to improve our infrastructure and seek to educate citizens to use less water in their daily lives.

Procurement

We recognise that procurement has a vital role in furthering sustainable development. The Council is a major procurer of buildings, goods, works and services. Its choice of supplier and the specifications it requires have a major impact and CCTG recommends that the Council should be an exemplar Council that aims to develop a zero carbon footprint by 2040.

The Council should:

- write and adopt a procurement policy that encompasses sustainable development;
- educate, train and encourage internal procurers and commissioners to review their consumption of goods and services, reduce usage and adopt more environmentally friendly products and procedures;

- communicate the sustainable procurement policy to all staff, suppliers, members and other stakeholders.

Waste Management

Waste management and sustainability are key issues for the Borough's residential and business communities. Through robust waste collection contracts and in partnership with key disposal stakeholders, we are already providing enhanced and improved services to residents and our commercial clients. CCTG recommends that:

- we should establish net carbon savings targets from waste management services;
- maximise the conversion of waste to renewable resources;
- maintain current recycling levels of 58% -60% and improve where possible;
- investigate waste to energy opportunities.

“Innovation for sustainability is vital to shaping a better future around the globe. Collaboration will be the key to success.”

“One of Surrey’s major strengths is working with businesses and partners of all descriptions, and I’m delighted we already work closely with the Council on leading edge projects from sustainability and clean air to driverless cars and supporting infrastructure. This kind of collaboration maximises resources and expertise and produces great results for everyone.”

Professor Max Lu
President and Vice-Chancellor,
University of Surrey

Governance

- We recommend that there is a Lead Councillor and a strategic director who have Climate Change within their portfolio.
- We urge the Managing Director to recruit a climate change team with the knowledge and skills needed to help tackle the issues we have raised in this paper.
- We recommend that under the designated Lead Councillor, the CCTG continues and, in consultation with the climate change team, other internal officers and external experts and stakeholders, it agrees realistic targets for the goals set out above within workable projects and workstreams.
- The correct stakeholders and partners needed for each goal need to be mapped. This of course includes Surrey County Council and local businesses.
- All projects to be properly costed.

Our Next Steps

- Our primary aim is to produce and implement a Climate Change Strategy for the Borough with a roadmap and costed plan as to how we will achieve our aims.
- A realistic target for each priority area is needed and a set of measurables against which progress can be tracked.

- The Council should prioritise its own estate and give a target date for when it will be net carbon neutral. For GBC's estate this should include their offices, Council owned buildings and houses, and its fleet of vehicles etc.
- The Council should then prioritise its partners – e.g. housing associations and those from whom it procures.
- Baseline information for each priority area is needed. In the first instance, we should enable residents to calculate their own individual carbon footprint and aggregate the information.
- Likely trends to 2040-2050 (some of which are already in the emerging Local Plan) need to be reviewed.
- The Council needs to investigate how it can support our residents, perhaps by providing new sources of energy or transport and benefiting from this as a new income stream e.g. by becoming a source of green energy; or providing Mobility as a Service (MaaS).

Councillor Nikki Nelson-Smith

**Chairman, Climate Change Task Group
2018-2019**

Appendix 3: National and Regional Policy in relation to our Innovation Strategy

Innovation Policy – the Government’s Industrial Strategy (2017)

As a key factor for business and economic growth and productivity, broadband provision is a high priority issue in the Government’s new Industrial Strategy through the National Productivity Investment Fund and features in the refresh of the Local Enterprise Partnership’s local industrial strategy. The Engineering Employers Federation has also lobbied the National Infrastructure Commission on the importance of upgrading fibre connections.

The national Industrial Strategy identified five foundations of productivity focused on Ideas, People, Infrastructure, Business Environment and Places – under Infrastructure the Government has pledged a major upgrade to the UK’s infrastructure.

The Strategy also identified four Grand Challenges to put the UK at the forefront of the industries of the future: Artificial Intelligence and the Data Economy; Clean Growth; Future of Mobility and the Ageing Society. Technological innovations are already transforming how we live and work but there is an urgent need for greater investment in the skills, industries and infrastructure of the future.

Innovation Policy – Enterprise M3 Local Enterprise Partnership (LEP) Strategic Economic Plan

‘A Strategic Economic Plan for the Enterprise M3 area 2018 – 2030’ sets out how an already-established national asset and economic powerhouse can grow its economy by four per cent each year and add £39bn of GVA to the UK economy. The Enterprise M3 (EM3) LEP area already contributes 2.9 per cent of the UK’s annual economic output, clearly punching above its weight.

EM3’s Strategic Economic Plan identifies two ‘stimulants’ that will generate economic expansion:

- Digital and Data Technologies – incorporating the ground-breaking 5G Innovation Centre based at the University of Surrey which includes Vodafone, Huawei, O2 and EE as corporate members, and also the National Cyber Security Centre at Royal Holloway University.
- The Clean Growth Economy – Siemens is working on an Energy Strategy for the EM3 LEP area and there are plans to create an energy hub.

These will underpin Enterprise M3’s five priorities for economic expansion:

1. High value sectors for a globally facing economy.
2. Enterprise and innovation for scaling up high productivity SMEs.
3. Skills for a high value, high growth economy.
4. Connectivity for a 21st century advanced digital and low carbon economy.
5. Dynamic communities and sustainable growth corridors.

The plan also highlights how the Government’s four ‘Grand Challenges’ - The Ageing Society; Clean Growth; Future of Mobility; Artificial Intelligence and Big Data - from its Industrial Strategy 2017 are ‘Grand Opportunities’ for Enterprise M3 that will be carried forward in its Local Industrial Strategy.

Broadband access in the LEP area compares well to other parts of the country in terms of the proportion of the population achieving high speeds, but rural areas report problems achieving high speed broadband access, and the national high-speed standards compare poorly to those of other countries. Mobile telephone and internet connectivity can be patchy across the LEP area and businesses have consistently reported challenges in terms of securing access to the quality and consistency of service that they need to undertake their operations. In their response to the Industrial Strategy consultation the Guildford Gaming Network (G3) have highlighted how this vital sector needs an operating environment that is super-connected.

As indicated above, this proposed step change in digital connectivity will be a major element of Enterprise M3's Local Industrial Strategy and the LEP has already developed a highly collaborative and participative process involving major partners and stakeholders – councils, businesses and other organisations. Several councils across the LEP area – including Guildford's – are already investigating or investing in fibre networks and some of the opportunities that they can support, including 5G networks and greatly enhanced mobile connectivity.

This will support development of regional digital infrastructure; experimental and commercialisation environments (e.g. 5G Networks and test beds); business models and governance arrangements to support experimental or commercial developments; and compilation of initial use cases for vertical applications.

Clean Air Strategy 2019 (Executive Summary)

The Government's Clean Air Strategy focuses on tackling all sources of air pollution, making our air healthier to breathe, protecting nature and boosting the economy. The Clean Air Strategy complements three other UK government strategies, the:

- Industrial Strategy
- Clean Growth Strategy
- 25 Year Environment Plan

The Strategy's Executive Summary outlines how, since the middle of the 20th century, many of the worst impacts of air pollution have been addressed through regulatory frameworks, investment by industry in cleaner processes and a shift in the fuel mix towards cleaner forms of energy.

However, exposure to the pollution still present in our atmosphere is one the UK's biggest public health challenges, shortening lifespans and damaging quality of life for many people. It also harms the natural environment, affecting our waterways, biodiversity and crop yields.

Clean air is essential for life, health, the environment and the economy. Accordingly Government will act to tackle air pollution which shortens lives and has already acted to reduce concentrations of nitrogen dioxide (NO₂) around roads from cars.

But vehicles are not the only source of harmful emissions. Air pollution is a result of the way we currently generate power, heat our homes, produce food, manufacture consumer goods and power transport. Better, cleaner technologies and simple changes in behaviour will tackle the pollution that claims lives.

In the past, the priority was to tackle the biggest individual sources of pollution. As these major sources of emissions have decreased, the relative contribution of smaller and more diffuse sources of air pollution, like smaller industrial sites, product use, open fires in homes and spreading manure on farms, has increased and now requires new action.

The Government have already adopted ambitious, legally-binding international targets to reduce emissions of five of the most damaging air pollutants (fine particulate matter, ammonia, nitrogen oxides, sulphur dioxide, non-methane volatile organic compounds) by 2020 and 2030. Also proposed are tough new goals to cut public exposure to particulate matter pollution, as recommended by the World Health Organization.

The Clean Air Strategy 2019 sets out the comprehensive action required from all parts of government and society to meet these goals, with new legislation creating a stronger and more coherent framework for action to tackle air pollution.

This will be underpinned by new England-wide powers to control major sources of air pollution, in line with the risk they pose to public health and the environment, plus new local powers to take action in areas with an air pollution problem.

These will support the creation of Clean Air Zones to lower emissions from all sources of air pollution, backed up with clear enforcement mechanisms.

Appendix 4: Guildford's Key Innovation Sectors

Enterprise, Research and Development

Guildford is home to three Higher and Further Education institutions in the University of Surrey, Guildford College Group and the Academy of Contemporary Music. All three encourage and support the principles of business start-up, enterprise and innovation. Since its move to Guildford in 1966, the University of Surrey has developed its highly successful Surrey Research Park and in 2002 joined with the Universities of Bath, Bristol, Exeter and Southampton to create the widely respected SETSquared brand to build on its own research and enterprise support framework. These R&D strengths underpin the growth that characterises the sectors listed below – with the communications technologies of broadband, 5G and WiFi enabling all of them.

5G, Information and Communications Technology

The University of Surrey has been at the forefront of mobile communications for decades and Guildford is recognised as the home of international digital technological research and development, leading the way in space, communication, 5G and gaming. Superfast broadband coverage is widely available in urban and suburban Guildford – however, significantly faster full fibre broadband (1Gigabit per second) is becoming available in the rural parts of the Borough. Its wider application will be important in future-proofing Guildford as the opportunities of new technologies like electric or connected and autonomous vehicles evolve.

Advanced Manufacturing

This is another important and established cluster for Guildford, comprising mechanical engineering, electrical and instrument engineering, telecommunications and defence. The aerospace and defence cluster accounts for over 4,000 jobs in Guildford and there has been an increase in R&D investment. Advanced manufacturing has a particular strength in technical consultancy and research and development, whereas the automotive cluster is based more on the sales of vehicles rather than manufacturing – with locally-based Alexander Dennis keeping alive the name which was once synonymous with the buses, fire-engines and refuse vehicles that rolled off the Guildford production lines throughout the 20th century.

The University of Surrey's technology roots in Battersea, south London, its historical links with Surrey aerospace companies like Hawker Siddeley and Vickers Aircraft and, more recently, major projects such as construction of the M25, have led to a range of civil, electrical and mechanical engineering innovations. The most successful spin-out company from the University in recent years is, without doubt, Surrey Satellite Technology Ltd. (SSTL) – see Space for more details.

Bioscience

The Pirbright Institute (formerly the Institute for Animal Health) is a research institute, dedicated to the study of infectious diseases of farm animals. It forms part of the UK government's Biotechnology and Biological Sciences Research Council (BBSRC). The Institute employs scientists, vets, PhD students and operations staff.

A more recent development in veterinary science has come through the University of Surrey, which has established the UK's newest School of Veterinary Medicine, creating a vet school that embraces the traditional values of professionalism, scientific curiosity and clinical excellence, while also developing a school with broad horizons.

The Vet School's extensive network of partners in clinical practice, industry and research opens up unique learning opportunities for students and for industry-relevant research. Its global outlook continues to ensure an international perspective on all aspects of veterinary science – helping to realise the vision of a dedicated group of people that included Professor Noel Fitzpatrick – TV's Supervet – in order to build what could become one of the world's foremost Veterinary Schools.

Business Services

Major contributors to the success of this sector are in the financial, insurance and legal services including Allianz and a number of regional law firms and accountants. Across this professional cluster over 18,000 jobs have been generated. The Enterprise M3 Local Enterprise Partnership (EM3 LEP) has established a Growth Hub with which the Council maintains a close working relationship to support new and growing businesses.

Creative Arts

Guildford offers a range of cultural experiences including the Council's own Entertainment and Heritage venues such as the Electric Theatre and G-Live, together with other prominent town centre attractions including the Yvonne Arnaud Theatre and, on the University of Surrey campus, Guildford School of Acting. Also at the University, their prestigious Tonmeister degree course is unique in the UK, blending rigorous musical study, advanced investigation of audio engineering and mastery of sound-recording operation and practice. The programme enjoys superb links to, and reputation within, the industry and is aimed at exceptional students who are primarily interested in engineering and music, and who aspire to a career in the audio or music industries.

In terms of visual arts, Guildford has been at the forefront of thriving digital developments in computer gaming (see below) and an evolving project at Send Business Centre will provide a creative hub hosting hi-tech film and video studio and post-production facilities.

Gaming

Since companies like Bullfrog and Lionhead Studios set up in Guildford in the late 1980s and early 1990s, the town has attracted further artists and developers in this field, earning it the informal title of "The Hollywood of Gaming". This has been accelerated by the presence of major companies like Electronic Arts (EA), Kuju Entertainment and Media Molecule. EA is a major American developer, marketer, publisher and distributor of video games and is now one of the largest video game publishers in the world. Kuju Entertainment is one of the leading independent game development companies, now operating in studios in the UK, US and mainland Europe. With its specialist expertise in a wide range of genres on console, PC and handheld platforms, Kuju develops for Sony Playstation, Nintendo Wii and Microsoft's Xbox.

Healthcare

This sector is already heavily dependent on technology and, while it continues to evolve in response to changing demography, greater life expectancy and new, improved treatments, it is the Royal Surrey

County Hospital (RSCH) that remains the local focus for delivery of healthcare, while specialist services are offered through GP surgeries and mental health support partners. For over 50 years the RSCH and St Luke's Cancer Centre have been at the cutting edge of Cancer diagnosis and treatment, receiving national and international recognition. Patients benefit from the latest innovative treatments available, delivered by committed and highly skilled staff. If it is to meet the increasing needs of an ageing population, another facet of healthcare that will be transformed by technology is adult social care. The range of provision available is likely to move towards home-based services and the development of sensor technology monitoring will – assuming sufficient broadband, 5G and wireless connectivity – enable more patient consultations to be conducted remotely, thus avoiding some travel, parking and waiting delays.

As well as technological advances, innovation in the human and social aspects of healthcare will help to bring about changes in the delivery of health and wellbeing. Already, improving access to psychological therapies (IAPT) is supporting people experiencing some mental health problems, but there are wider and perhaps related social needs around loneliness that are beginning to be recognised and addressed.

Retail

This is a very important sector to Guildford – and one that is increasingly vulnerable to market dynamics. On one level this may involve accepting that new retail models will increasingly need to offer online transactions, changing the character and purpose of the traditional High Street shop-based business. This might involve the type of "third-party" sales model operated by Amazon, which links consumers with the business holding stock (not Amazon itself) and enables collection from retailers offering the Amazon Locker service.

On another level, restaurants are vulnerable to changing social trends and, of course, recession. That scenario challenges restaurateurs to modify their offer to retain or draw in new customers, with the most successful restaurant businesses surviving for reasons of quality, reputational loyalty or price. Business Rates – widely perceived as archaic in the 21st Century Internet

Age – may tip the balance for some businesses that are struggling to stay afloat with declining recessionary custom. This has been cited as a factor influencing the recent fortunes of some major High Street retailers, including Debenhams, HMV, House of Fraser, Matala and the restaurants Caffe Nero, Jamie's Italian and Prezzo.

Whatever the reasons for change on UK High Streets, the uncertainty surrounding Brexit negotiations between the UK Government and the remaining 27 EU nations during 2017-19 did not help an already difficult retail climate, especially where EU migrant workers are important to the service offered. Of course, this scenario also affects other sectors such as food production, healthcare and tourism. The scope for post-Brexit innovation and enterprise is potentially unlimited.

Space

As indicated earlier, the jewel in the crown of University of Surrey spin-out companies is SSTL – Surrey Satellite Technology Limited. Founded in 1981, SSTL has established a reputation as the world's leading

small satellite company, delivering operational space missions for a range of applications including Earth observation, science and communications. SSTL satellites have been used in monitoring and responding to recent earthquake and tsunami disasters – the latest SSTL innovation has been the RemoveDEBRIS mission, which is aimed at performing key Active Debris Removal (ADR) technology demonstrations to find the best way to capture the estimated 40,000 pieces of space debris that are orbiting Earth.

Tourism

This is an important and growing sector of the Guildford economy, helped partly by the University of Surrey's increasingly international reach in terms of both its students and its academic staff. Strong links with China exist already – post-Brexit, the importance of developing these and other international business and leisure tourism opportunities will prompt new innovative thinking.

Appendix 5: Achieving Transformation

Transformation through Vision

Guildford's Key Innovation Sectors as shown in Appendix 4 will inevitably share many qualities and characteristics for which a common approach might be appropriate. A successful strategy in one sector might provide lessons for application in others.

The Council can apply such lateral thinking to its own policies and strategies in order to identify benefits and outcomes that cross over between departments. An example might be the installation of traffic and car parking sensor technology that translates into increased and measurable footfall within the town centre. This in turn might enable predictions of shopper movements that retailers can use to increase sales through targeted marketing. In this example, the Council would work closely with Experience Guildford to support town centre retailers.

Transformation through multi-authority partnership working

The Council participates in various formal and informal groupings, in particular through Surrey County Council (e.g. Surrey Leaders Group, Surrey Treasurers) and the Enterprise M3 Local Enterprise Partnership (Board Membership and project collaborations e.g. Growth Hub, Rural Action Group).

The UK Government has recently made funding available through its Department for Digital, Culture, Media and Sport (DCMS) with provisos that require local authority leadership of project bids and, more importantly, partnership working between authorities, whatever their level of operation (County as well as Boroughs and Districts). An evolving example of multi-authority collaboration concerns the DCMS Local Full Fibre Networks (LFFN) programme. The LFFN programme guidance issued in August 2018 identified

8 main priority Themes for funding support:

- Rapid Mobilisation: projects with a pre-existing procurement route and able to begin by March 2019
- Multi-authority/public body: demonstrating the potential strength of collaboration
- Rural focus: especially where the "final 10%" of rural locations are likely to be reached
- Devolved/Regional Corridor/Growth Hub: projects with a geographic focus targeting strategic economic or development objectives as part of a multi-strand digital and place strategy
- 5G or Barrier Busting: supporting local body exemplars creating the optimal investment environment for fibre and 5G
- Public Sector Productivity: using fibre to target improved public sector outcomes e.g. in education technology or telemedicine
- Market Development: e.g. specific market development through clustering and asset mapping
- Innovation or Learning: new projects that stimulate commercial investment in full fibre

In response to this, Guildford Borough Council hosted a broadband workshop in November 2018 which has led to an evolving partnership consisting of 5 Surrey Boroughs/Districts, Surrey County Council and the Local Enterprise Partnerships, Enterprise M3 and Coast-to-Capital. The initial focus is on developing the "soft-dig" fibre network being deployed by Broadband for Surrey Hills Ltd. (B4SH). Other key broadband infrastructure partners are Highways England, Network Rail and the University of Surrey.

Transformation of our County: Surrey Future 2030

The 11 Councils responsible for the delivery of public services in Surrey have participated in strategic collaboration discussions focusing on what the County will look like in 2030. This was partly in response to guidance from the Government that expected local authorities to share:

- **A clearly articulated ‘place narrative’** for areas, setting out ambition for delivering growth and what the shared priorities are.
- **A clear link between the place ambition & government priorities** e.g. reflecting a step-change in housing delivery, improving digital connectivity, supporting local industrial strategy, ensuring high quality design and build, leading to more effective use of existing urban/ public land.
- **A robust evidence base** particularly to support strategic infrastructure (transport) priorities demonstrating how these will deliver the place ambition.
- **A good understanding of the relationships within the wider area** and links to other plans and strategies e.g. LEP growth plan/ LIS, Sub-national transport priorities; recognise strategic planning is more than ‘planning’ and operates at different spatial levels.

The Surrey Future Workshop in June 2018 identified the following strategic drivers of collaboration:

- The need for a strong ‘Surrey voice’ and **strategic leadership**.
- Securing **good growth** with the right infrastructure and the right balance between competing pressures.
- A **place based approach** to growth integrating economic, social, spatial and infrastructure priorities.
- Taking back control with a more **proactive, resilient and responsive approach to growth**.
- **Access to additional funding** to support growth in the right locations .

- More effective and efficient use of **resources and skills**.
- **Securing buy-in from Surrey communities and stakeholders** to the shared strategic priorities and ambition for good growth.

Transformation in Freiburg – Guildford’s Twin City

A 2018 conference hosted by the city of Freiburg im Breisgau (pop. 220,000) for its twinned towns and cities around the world included a focus on the EU Circular Economy Package which was adopted by the European Commission in December 2015 as a key milestone on the road to a low carbon, resource efficient future.

The circular economy is the most important deliverable of the EU’s Roadmap to a Resource Efficient Europe, which sets out a vision for the structural and technological changes needed to transform Europe’s economy into a sustainable one by 2050.

The European Commission’s view is that Europe needs to move away from a ‘linear’ economic model that is resource intensive and unsustainable towards a more ‘circular’ approach, where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised. This transition is an essential requirement to ensure a sustainable, low carbon, resource efficient and competitive economy.

Such transformation will require the active involvement of Member States, regions and municipalities, business communities and citizens. This approach will boost the EU’s competitiveness by protecting against resource scarcity and volatile prices, and helping create new business opportunities through innovative and more efficient production methods. Local jobs will be created at all skills levels, with opportunities for social integration and cohesion. At the same time, the circular economy will save energy and prevent the over-exploitation of finite resources, by optimising the use of raw materials and fully exploiting the resources embedded in valuable waste streams. These actions will bring benefits in terms of biodiversity, climate change mitigation, and the reduction of air, soil and water pollution.



The Circular Economy Action Plan highlights five priority sectors that face specific challenges and need targeted action:

- Plastics
- Critical raw materials (CRMs)
- Food waste
- Biomass and bio-based products, and
- Construction and demolition waste (CDW).

LIFE – the EU financial instrument supporting environmental, nature conservation and climate action – has invested €68 million in 31 projects in these sectors (EU contribution: €30 million), with plastic waste and CDW the two main areas.

Every key business sector listed in Appendix 4 will need – in following the Transformation approaches shown above in Appendix 5 – to see future economic sustainability in the context of environmental sustainability.

A healthy planet will – literally – support healthy economies.

Appendix 6: Links to Council and other partner strategies

This Strategy is informed by and builds on a number of other studies and strategies including:

- The evidence base supporting the Local Plan
- The Guildford Economic Strategy (2013)
- Guildford Borough Council Transport Strategy (2016)
- Guildford Borough Council Corporate Plan 2013-2016
- *Britain in the 2020s* – Institute for Public Policy Research (2016)
- *Forgotten opportunities: the dynamic role of the rural economy in post-Brexit Britain* - Institute for Public Policy Research (2017)
- *Building our Industrial Strategy (2017)* – HM Government
- *Future Telecoms Infrastructure Review (2018)* – HM Government
- *UN Sustainable Development Goals (2018)* – United Nations
- *Global Warming of 1.5oC (2018)* – Intergovernmental Panel on Climate Change (IPCC)
- *Clean Air Strategy (2019)* - HM Government
- *Open by Default: International Open Data Charter (2019)*
- Guildford Borough Council *Future Guildford Review 2019*
- Guildford Visitor Strategy 2014-2020
- Guildford *Rural Economic Strategy 2017-2022* (in partnership with Waverley and Woking)
- *A Vision for Guildford's Countryside 2017-2027*
- Enterprise M3 Local Enterprise Partnership Local Industrial Strategy 2019
- *On Solid Ground* – Campaign to Protect Rural England (2016)
- *Rural Business 2030: Unlocking Investment, Unlocking Potential* – Country Land and Business Association
- *Health and wellbeing in rural areas (2017)* – Local Government Association and Public Health England
- *This is a crisis: Facing up to the age of environmental breakdown* – Institute for Public Policy Research (2019)
- *A World of Collaboration* – Annual Review of the University of Surrey (2019)

As indicated in the Action Plan at Appendix 1, the University of Surrey is and will remain a major business, community and research partner. The University is developing its own Innovation Strategy and, in advancing a closer and formal strategic relationship, the Council will seek to identify our shared objectives and to dovetail future innovation priorities accordingly.

Innovate Guildford

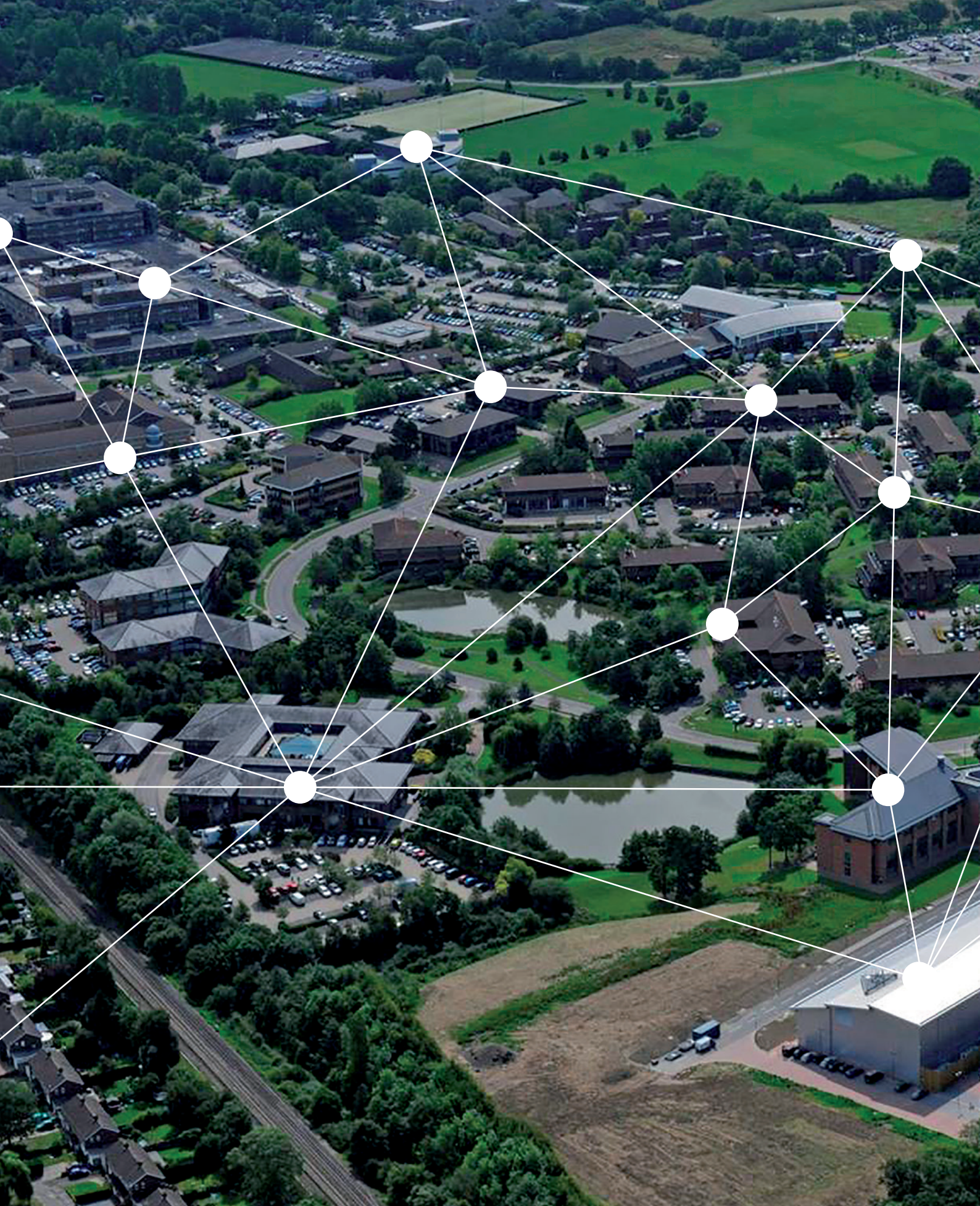



TOMORROW'S INNOVATORS ARE MADE IN GUILDFORD!



These are Guildford's future innovators. Innovate Guildford is now firmly established as a popular one-day Science, Technology, Engineering and Maths (STEM) and Arts family festival where children and young people get the chance to be creative and to do real science, thanks to our amazing exhibitors!

SEE YOU AT INNOVATE GUILDFORD 2020!



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