PROJECT NEWTON

land North of A2300, Burgess Hill, West Sussex

Science and Technology Park Sustainability Statement

Regulation 19 - September 2020

SECTION:

Introduction

This document has been prepared to support the allocation proposals for a new Science & Technology Park in Burgess Hill and should be read alongside the 'September 2020 Positioning Statement'. Sustainable development is defined as "***development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*** *(The Report of the Brundtland Commission, 1987)* . It is about ensuring a better quality of life for everyone, now and for generations to come.

As further defined in the National Planning Policy Framework (NPPF) (as amended 2019)"*achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursed in mutually supportive ways"* so that opportunities are taken to secure net gains across the three objectives. These three key strands of sustainable development are:

- **Social**
- **Environmental**
- **Economic**

The NPPF (2019) considers that the purpose of the planning system is to contribute to achieving sustainable development in a positive way. Accordingly, there is a presumption in favour of sustainable development at the heart of the Framework.

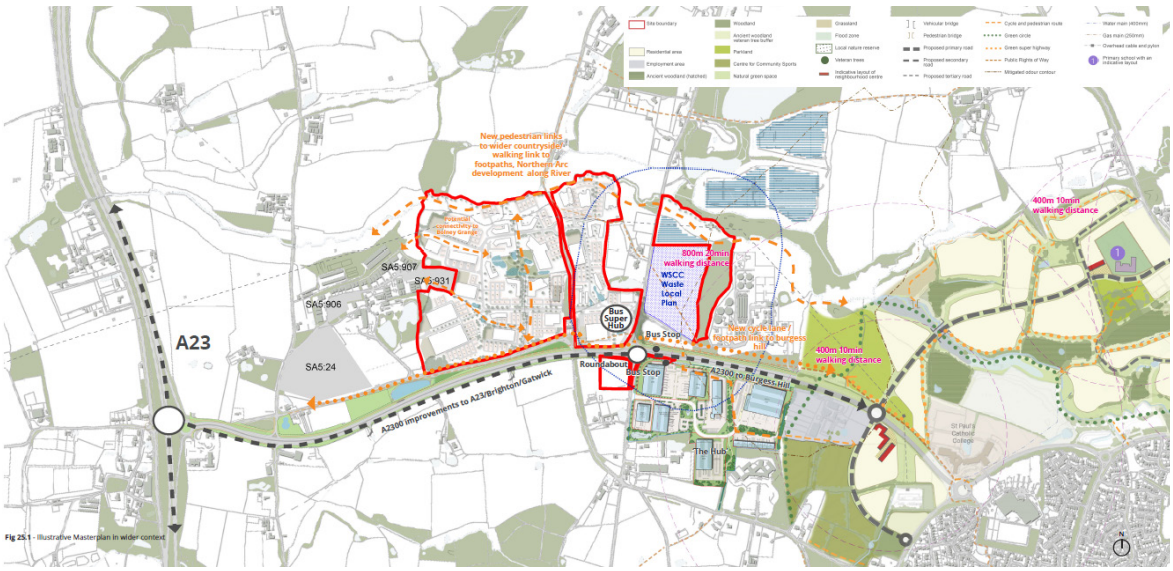
Aligning with National Planning Policy, this aspirational Sustainability Strategy explains how the development of a new Science & Technology Park (Science & Technology Park) in Burgess Hill could both explore and address the **Environmental** issues which form one aspect of sustainable development; and how in doing so this may have a positive impact upon the remaining **Social** and **Economic** strands in return. Whilst these proposals for a Science & Technology Park in this location are at a very early stages, the principles of sustainability underlie the key aspects of the concept masterplan and approach presented to Mid Sussex District Council (MSDC) to-date.

As outlined in the supporting 'Project Newton Positioning Statement – September 2020' the proposals for a new Science & Technology Park in Burgess Hill to the site North of the A2300, look to create a sustainable and appropriate balance addressing both the local and wider context. In doing so, the proposals seek to create a new landscape-led employment site to address future work needs, trends and evolution. The Science & Technology Park doesn't look to replicate what has been built elsewhere but instead proposes to be the next generation of a Science & Technology Park and this is demonstrated throughout the Positioning Statement which references ambitions to enable evolution in ideas, technology, connectivity, travel, materials and energy. The project team and developers will seek to ensure that the proposals contribute to achieving sustainable development. It is the purpose of this document to explore how the new Science & Technology Park may address principles of sustainability in the future design, construction and operation of a new Science & Technology Park on this site to the North of the A2300, Burgess Hill.

The Challenge we face

Climate change is recognised by international consensus to be mainly due to greenhouse gas emissions resulting from combustion of fossil fuels for energy use. Energy from fossil fuels consumed in the construction and operation of buildings accounts for approximately half of the UK's emissions of carbon dioxide. Therefore, reducing carbon, waste and other impacts from the Built Environment is an important strand in tackling climate change and environmental degradation.

This proposal aspires to become a model of how to balance the needs of ever evolving carbon-based energy reductions against commercial pressures and continually changing technologies and science, in a way which is both commercial and economically viable.



SECTION 02

Policy Context

The NPPF (2019) sets out three interdependent objectives for achieving sustainable development which are:

a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

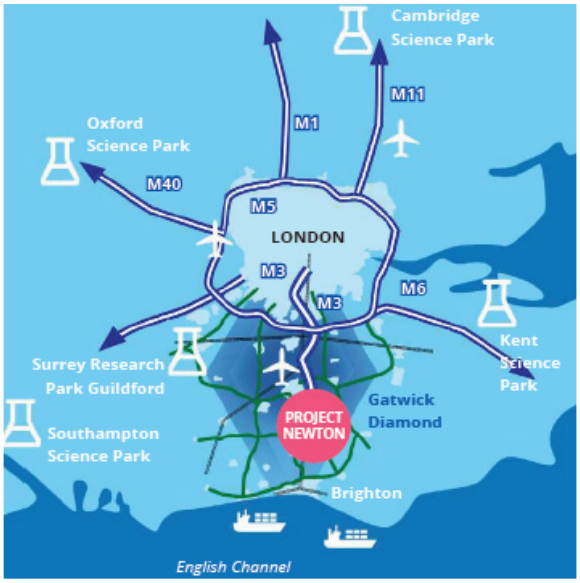
b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

c) an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

Paragraph 9 of the NPPF (2019) states that these three objectives should be delivered through the plan-making process and should play an active role in achieving sustainable solutions for new development, taking into account the local circumstances of each area, to reflect its character, needs and opportunities.

The MSDC District Plan (2014-2031) is committed to achieving sustainable development in line with the NPPF (2019) and sets out a vision for the District to *"…to maintain, and where possible, improve the social, economic and environmental well-being of our District and the quality of life for all, now and in the future."*

The Science & Technology Park proposals aim to deliver c.1.4 million sq ft of employment floorspace, providing increased job provision in the District over the Plan period and beyond. The site's locality, adjoining the Northern Arc and Burgess Hill to the East and adjacent to the A2300, provides opportunities for the Science & Technology Park proposals to align with its surrounding context; to provide a 'golden thread' for development that will support the needs of local communities and economy both within the District and wider South-east, in alignment with elements of the NPPF's economic and social objectives (2019).



Given the challenges faced with climate change, it is critical that a new development makes every opportunity to minimise its impact on the environment and wherever possible, deliver solutions for mitigating and adapting to the impacts of climate change. MSDC District Plan Policy DP39: Sustainable Design and Construction requires all new development to improve its sustainability through incorporating measures, where appropriate and feasible and according to the type, size and location of development. These measures include:

- Minimise energy use through the design and layout of the scheme including through the use of natural lighting and ventilation;
- Explore opportunities for efficient energy supply through the use of communal heating networks where viable and feasible;
- Use renewable sources of energy;
- Maximise efficient use of resources, including minimising waste and maximising recycling/ re-use of materials through both construction and occupation;
- Limit water use to 110 litres/person/day in accordance with Policy DP42: Water Infrastructure and the Water Environment;
- Demonstrate how the risks associated with future climate change have been planned for as part of the layout of the scheme and design of its buildings to ensure its longer term resilience.

MSDC District Plan Policy DP42: Water Infrastructure and the Water Environment requires new development proposals to be developed in accordance with the Water Framework Directive objectives and, the Gatwick Sub Region Water Cycle Study findings in relations to water quality, water supply and wastewater treatment. This requires development to demonstrate sufficient surface and foul water capacity can be achieved and, that there is an adequate water supply to service the development.

Policy DP42 sets out a requirements for the following water consumption standards to be met:

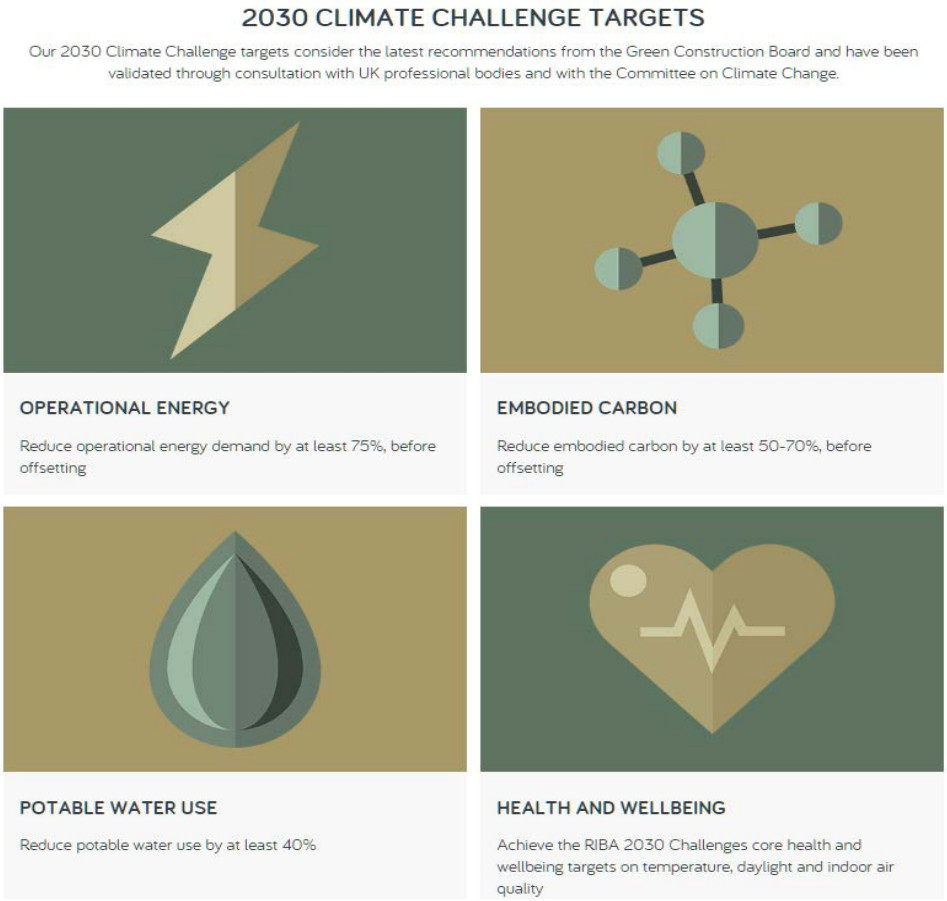
- As a minimum, non- residential buildings should meet the equivalent of a 'Good' Standard, with regard given to the BREEAM water consumption targets for the development type.

The Science & Technology Park proposals are at the early stages of indicative Masterplanning and therefore, detailed design strategies to address the criteria set out in policy DP39 and DP42 will form part of the planning application stages, following allocation. However, even at this early stage, measures have been taken to demonstrate the commitment to maintaining a green ethos and sustainability at the centre of our proposals. The site's close proximity to adjacent solar farms, Southern Water operations and 5 ha of land allocated for non-municipal solid waste in the WSCC Waste Local Plan, provides opportunity for maximising resource efficiency through the reduction and reuse of energy, waste and water. We are therefore committed to ensuring that our proposals align with the aspirations of the District Plan to achieve sustainable development and specifically will be compliant and look to build on the requirements of policy DP39 and DP42 for sustainable construction, operations, and resource efficiency.

The Science & Technology Park aims to be visionary and forward thinking in its approach to tackling climate change and will designed in such a way that it is future-proofed against the challenges faced in rising temperatures and extreme weathers, whilst also reducing the impact of development on our environment and local communities, through innovative and aspirational design strategies. Site specific examples of how we may address this at formal planning stage are explored in the next section " Meeting the Challenge".

Meeting the Challenge

In 2019, the Royal Institute of British Architects (RIBA) launched their '2030 Climate Challenge' to identify targets and provide significant opportunities for the construction sector (including building professionals and developers/ owners), with a clear direction on the issues. The RIBA, alongside the Construction Leadership Council's (CLC) Green Construction Board, have developed progressive 10-year targets for operational energy use, embodied carbon, potable water and health and well-being, with the ultimate goal to meet net zero (or better) whole life carbon for new and retrofitted buildings by 2030.



The targets within the RIBA 2030 Challenge present ambitious yet measurable and progressive targets that also sit within MSDC's own District Plan period (to 2031). These same targets will form industry recommendations to the Government for future Building Regulation requirements on Energy and Sustainability.

Given that this project is in the early stages of development, the proposals have not reached a detailed level of design which would demonstrate that targets have been met, including demonstrating that a target of net zero carbon is achievable. However, the Concept Masterplan, Positioning Statement and supporting evidence base submitted as part of the Regulation 19 stage of the emerging Site Allocations DPD, including this Sustainability Document, demonstrate how the Science & Technology Park will provide the opportunity to meet and challenge targets on energy and climate change, in line with national and local commitments.

The project team consider it both fitting and appropriate that the Science & Technology Park should aspire to tackle these targets where it can be demonstrated viable to do so, and indeed hopes to provide a catalyst for both attracting and retaining high quality, sustainable businesses to the Park.

What are the RIBA 2030 Targets?

The nature, scale, context and typology of the future buildings on the new Science & Technology Park, as well as their ultimate end-users should enable these aspirational targets to be met; through the detailed design and development of the proposals.

The following text summarises and sets out the Targets identified within the RIBA's 2030-Challenge.

- **Whole life carbon**

Target net zero whole life carbon for new (and retrofitted) buildings by 2030, by looking to follow the progressive RIBA 2030 Climate Challenge targets:

RIBA 2030 Climate Challenge target metrics for non-domestic buildings

RIBA Sustainable Outcome Metrics	Current Benchmarks	2020 Targets	2025 Targets	2030 Targets	Notes
Operational Energy kWh/m²/y	225 kWh/m²/y DEC D rated (CIBSE TM46 benchmark)	< 170 kWh/m²/y DEC C rating	< 110 kWh/m²/y DEC B rating	< 0 to 55 kWh/m²/y DEC A rating	UKGBC Net Zero Framework 1. Fabric First 2. Efficient services, and low-carbon heat 3. Maximise onsite renewables 4. Minimum offsetting using UK schemes (CCC)
Embodied Carbon $kgCO_2e/m^2$	1100 $kgCO_2e/m^2$ (M4i benchmark)	< 800 $kgCO_2e/m^2$	< 650 $kgCO_2e/m^2$	< 500 $kgCO_2e/m^2$	RICS Whole Life Carbon (A-C) 1. Whole Life Carbon Analysis 2. Using circular economy Strategies 3. Minimum offsetting using UK schemes (CCC)
Potable Water Use Litres/person/day	>16 l/p/day (CIRA W11 benchmark)	< 16 l/p/day	< 13 l/p/day	< 10 l/p/day	CIBSE Guide G

RIBA 2030 Climate Challenge target metrics for all buildings

Best Practice Health Metrics		References
Overheating	25-28 °C maximum for 1% of occupied hours	CIBSE TM52, CIBSE TM59
Daylighting	> 2% av. daylight factor, 0.4 uniformity	CIBSE LG10
CO_2 levels	< 900 ppm	CIBSE TM40
Total VOCs	< 0.3 mg/m^3)	Approved Document F
Formaldehyde	< 0.1 mg/m^3)	BREEAM

- **Operational energy and carbon emissions**

Aspire to target <55 kWh/m2/y operational energy use for non-domestic buildings by 2030 (minimum DEC A or 75% reduction in operational energy as compared to CIBSE TM46 benchmarks), including maximising the use of on-site renewables.

Design using realistic predictions of the operational energy target to avoid the performance gap and report the energy use by fuel type and include the full breakdown of regulated and unregulated energy use. The RIBA recommends the use of rigorous design for performance methods such as CIBSE TM5412 or Better Building Partnership Design for Performance 13.

Use low carbon heating, for example heat pumps or connections to district heat networks, and target no new connections to the gas grid or use of fossil fuel boilers, and target space heat demand of 15-20 kWh/m2/y, by 2025 at the latest, as recommended in the Committee of Climate Change UK housing: 'fit for the future?'

Offset remaining carbon emissions by contributing to UK renewable energy projects that work towards decarbonising the national and/or local grid.

- ***Embodied energy and carbon emissions***

  Use the RICS Whole Life Carbon Assessment for the Built Environment professional statement 201715 to assess embodied carbon.

  Target embodied carbon of 500 kgCO2e/m2 for non-domestic buildings (minimum 50-70% reduction in embodied carbon compared to the Movement for Innovation benchmarks16), using low carbon healthy materials that are responsibly and ethically sourced.

  Offset remaining carbon emissions by UK offsite renewable energy projects and/or certified woodland and reforestation projects17.

- **Water use**

  Target 10 litres/person/day for non-domestic buildings (minimum 40% reduction in potable water use compared to CIRIA guidance18 and UK Building Regulations requirements19), by minimising water demand, optimising building systems, and harvesting rainwater as well as recycling and reusing water on-site.

- **Indoor health**

  Avoid unintended consequences of poor health and wellbeing by meeting key health metrics set out in the RIBA 2030 Climate Challenge.

- **Biodiversity**

  Leave a site with significantly enhanced biodiversity and more green cover than before development.

Why Should Project Newton explore this approach, and *How* might it be achievable in reality?

A Science & Technology Park should be a hive for supporting and enhancing the collaborative efforts, bringing together the brightest minds and most forward thinking, creative industries and companies; from new start-up businesses through to world-leading branded names. For our Science & Technology Park proposals, the evolution of the design strategy and concepts have sought to create a landmark 'destination' site that will be a catalyst for innovative and forward-thinking technologies, as the golden thread of the Science & Technology Park Masterplan. Over recent years the need to respond to Climate Change has become high on the agenda for many businesses, with many committing to the declaration of a 'Climate Emergency' or publishing ambitious targets to achieve a net zero carbon footprint themselves or even through their supply chains.

The framework for new business accommodation within the Project Newton Outline Masterplan in a landscape-led setting may therefore, provide the perfect location to attract and further retain such environmentally- conscious and progressive businesses to the region, helping make this commercially and financially viable as an approach.

Our Science & Technology Park proposals place a Green ethos at the centre and careful consideration will be given to ensuring that each phase of the development is future-ready, to support the technologies and innovative solutions that continue to evolve for increasing the efficiency and carbon neutrality of development. Examples include the installation of electrical vehicle charging points and other green technology infrastructure as well as laying out development so that it is oriented to make the most of the adjoining solar farms and waste allocation, therefore, increasing energy and waste efficiencies on-site.

Sustainable travel is also a key factor in minimising carbon impact. The site's connection to the Northern Arc has presented unique opportunities for sustainable transport modes through on-going liaison with Homes England, WSCC and bus services providers including Metrobus and Compass, to develop sustainable solutions to travel between the Science & Technology Park, Northern Arc and links to the A23 connection between Brighton and Gatwick. Further detail on the proposed green modes of travel for the Science & Technology Park and reducing a dependence on vehicle trips is explored in the separate Mobility Statement (Connect Consultants).

The last 5 years have seen a greater awareness in Work/Life Balance and the health (physical and mental) of employees when at work. The recent Covid-19 pandemic has further reinforced the need for companies to recognise and support a balanced approach to achieve Social Sustainability. The Science & Technology Park outline masterplan and Positioning Statement illustrate the processes developed to date to ensure that the development of this site is carried out within a landscape-led framework to create a 'destination' and a 'place' to come to work.

This framework accommodates carefully considered buildings to meet the current and future needs of businesses within a high quality built environment, complete with the amenity and associated facilities that reflect the future Park community's needs in support of health, social and cultural well-being at work. This vision has sought to deliver a mixed-use neighbourhood centre, co-ordinated with the emerging Northern Arc development and plans for improving the quality of living and sustainable future for the Burgess Hill area. This collaborative approach is essential for achieving social sustainability to benefit existing and new residents in the District, through high-quality design and placemaking.

The next steps for the design and proposals for this Science & Technology Park are encouraged to review the targets within the 2030 Challenge as a means to demonstrate and achieve a development which is both viable and sustainable and that remains attractive to emerging, new and existing businesses and remains forward-thinking and progressive - all as outlined through the various topics and sections within the supporting Positioning Statement document. The detailed design and phasing strategy for development will help to deliver these objectives, through high-quality design, form and orientation that will unlock the full potential of this unique site, through a landscape-led approach to Masterplanning.

Given the aspirational nature but also the importance of the Challenge and Targets identified here, the need for a robust 'partnership approach' will be important in making this a reality, especially with political support through Climate Change being central to both MSDC and WSCC:

- WSCC have declared a climate change emergency (April 5th 2019) and MSDC have accepted a ring fenced allocation of £100,000 to address sustainability and climate change.
- MSDC also adopted the (Feb 2018) 'Sustainability Strategy 2018-2023' to be a Sustainable Council, in a Sustainable Environment with Sustainable Communities.