APPENDIX 19.1
GHG PLANNING POLICY CONTEXT

Greenhouse Gas Appendices:

Stag Brewery, Richmond

February 2022

Experts in air quality management & assessment

Document Control

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19.1 GHG Guidance and Policy

19.1 In preparing this GHG assessment, consideration has been given to the requirements of national, regional and local planning policies.

European Guidance

Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment

19.2 The European Commission published this Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment[1] document in 2013. The aim of this guidance document is to *"help Member States improve the way in which climate change and biodiversity are integrated in Environmental Impact Assessments (EIAs) carried out across the EU*.

19.3 The main concerns to consider as part of the EIA are climate change mitigation, climate change adaptation and biodiversity. This GHG assessment focuses on the first point by quantifying greenhouse gases emissions associated with the construction and operation of the Proposed Development and considering mitigation measures to reduce such emissions. The Guidance stresses that it is important to *"investigate and use options to eliminate GHG emissions as a precautionary approach in the first place, rather than having to deal with mitigating their effects after they have been released"*. The mitigation measures listed include, but are not limited to:

- the consideration of technologies, materials and supply modes to reduce direct GHG emissions;
- plan carbon off-setting measures;
- build energy efficiency in the design of the project;
- use recycled/reclaimed low carbon construction materials;
- make use of renewable energy sources;
- choose a site that is linked to public transport system or put in place transport arrangements; and
- provide low-emission infrastructure for transport (e.g. electric charging bays, cycling facilities).

[1] European Commission (2013) Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment.

National Planning Policy

National Planning Policy Framework

19.4 The National Planning Policy Framework (NPPF)[2] sets out planning policy for England. It states that the purpose of the planning system is to contribute to the achievement of sustainable development, and that the planning system has three overarching objectives, one of which is 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".

19.5 Part 14 of the framework is entitled *"Meeting the challenge of climate change, flooding and coastal change"* and sets out the strategy for minimising the climate change effects of new development. Paragraph 149 describes that *"new development should be planned for in ways that can help to reduce greenhouse gas emissions through its location, orientation and design"*. The section describes how renewable and low-carbon energy sources should be considered in planning applications for development of any scale.

19.6 Paragraph 150 states that *"New development should be planned for in ways that […] can help reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards."*

19.7 Paragraph 151 describes further that "*to help increase the use and supply of renewable and low carbon energy and heat, plans should: a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts); b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers"* .

19.8 In determining planning applications, the NPPF requests that planning authorities should expect new development to

[2] Ministry of Housing, Communities and Local Government (2018) National Planning Policy Framework, Available: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf.

- comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
- take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

Climate Change Act 2008 (2050 Target Amendment) Order 2019[3]

19.9 In June 2019, the Government passed an order to amend the 2050 carbon emissions target in the Climate Change Act 2008 from 80% below 1990 levels to zero net carbon (i.e., 100% below 1990 levels). This new target will essentially end the UK's contribution to climate change by 2050.

Energy Act (2013)[4]

19.10 The Energy Act makes a provision for the setting of a decarbonisation target range, duties in relation to it and for the reforming of the electricity market for the purposes of encouraging low carbon electricity generation.

Climate Change and Sustainable Energy Act (2006)[5]

19.11 The Climate Change and Sustainability Act enhances the contribution of the UK to combating climate change and securing a diverse and viable long-term energy supply by boosting the number of heat and electricity microgeneration installations in the United Kingdom.

The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting[6]

19.12 The National Adaptation Programme sets out government's response to the second Climate Change Risk Assessment, showing the actions government is, and will be, taking to address the risks and opportunities posed by a changing climate. It forms part of the five-yearly cycle of requirements laid down in the Climate Change Act 2008 to drive a dynamic and adaptive approach to building our resilience to climate change.

The Clean Growth Strategy[7]

19.13 The Clean Growth Strategy sets out a comprehensive set of policies and proposals that aim to accelerate the pace of "clean growth", i.e., deliver increased economic growth and decreased

[3] Her Majesty's Stationery Office (2019) The Climate Change Act 2008 (2050 Target Amendment) Order 2019.

[4] Her Majesty's Stationery Office, 2013. Energy Act 2013.

[5] Her Majesty's Stationery Office, 2006. Climate Change and Sustainable Energy Act 2006.

[6] Defra (2018) The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting

[7] HM Government (2017) The Clean Growth Strategy

emissions. In the context of the UK's legal requirements under the Climate Change Act, the UK's approach to reducing emissions has two guiding objectives:

1. To meet our domestic commitments at the lowest possible net cost to UK taxpayers, consumers and businesses; and,

2. To maximise the social and economic benefits for the UK from this transition.

19.14 The Strategy contains policies relating to the delivery of clean, smart and flexible power, including reducing power costs for homes and businesses and more transparent carbon pricing. It effectively replaces the "The Carbon Plan: delivering our Low Carbon Future" published in 2011.

Approved Documents L1A[8] and L2A[9]

19.15 The Ministry of Housing, Communities and Local Government has published a series of 'Approved Documents' which provide guidance on ways to meet building regulations. The latest version of the Approved Documents L1A (2016) and L2A (2018) on the Conservation of Fuel and Power define the energy efficiency requirements for new buildings (domestic and non-domestic). The baseline Part L compliant CO_2 emissions calculated for the Proposed Development and presented within the Energy Strategy[10] were determined in accordance with the methodology detailed within these Approved Documents.

Regional Policy

New London Plan[11]

19.16 The New London Plan was published on 2 March 2021, incorporating consolidated changes to previous versions suggested by the Mayor of London, as well as addressing the Inspectors' recommendations following the 2019 Examination in Public and subsequent directions from the Secretary of State.

19.17 The New London Plan introduces a number of new and revised policies, of particular relevance to greenhouse gas emissions, the Plan describes that "*the Mayor is committed to London becoming a zero-carbon city*". It also explains that "*'Carbon' is used in the London Plan as a shorthand term for all greenhouse gases*".

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8 The Ministry of Housing, Communities and Local Government (2016) Approved Document L1A, Conservation of Fuel and Power in new dwellings, 2013 edition incorporating 2016 amendments – for use in England.

9 The Ministry of Housing, Communities and Local Government (2016) Approved Document L2A, Conservation of Fuel and Power in new buildings other than new dwellings, 2013 edition incorporating 2016 amendments – for use in England.

10 WSP (2021) Energy Statement.

11 GLA (2021) The London Plan 2021, Available: https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf

19.18 Policy SI 2 in the New London Plan relates specifically to greenhouse gas emissions; it states:

"Policy SI 2 – Minimising Greenhouse Gas Emissions

A. Major development should be net zero-carbon. This means reducing carbon dioxide emissions from construction an operation, and minimising both annual and peak energy demand in accordance with the following energy hierarchy:

1) be lean: use less energy and manage demand during operation

2) be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly

3) be green: maximise opportunities for renewable energy by producing, storing and using renewable energy on-site

4) be seen: monitor, verify and report on energy performance

B. Major development proposals should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy.

C. A minimum on-site reduction of at least 35 per cent beyond Building Regulations is required for major development. Residential development should aim to achieve 10 per cent, and non-residential development should aim to achieve 15 per cent through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided, in agreement with the borough, either:

1) through a cash in lieu contribution to the relevant borough's carbon offset fund, or

2) off-site provided that an alternative proposal is identified and delivery is certain.

D. Boroughs must establish and administer a carbon offset fund. Offset fund payments must be ring-fenced to implement projects that deliver carbon reductions. The operation of offset funds should be monitored and reported on annually.

E. Major development proposals should calculate and minimise carbon emissions from any other part of the development, including plant or equipment, that are not covered by Building Regulations, i.e. unregulated emissions.

F. Development proposals referable to the Mayor should calculate whole life-cycle carbon emissions through a nationally recognized Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions."

19.19 The requirements of Policy SI 2 of the New London Plan are broadly consistent with those in the GLA's Draft Guidance on preparing energy assessments[12] (Energy Assessment Guidance – 'GLA Guidance on preparing energy assessments as part of planning applications'), which states that:

"Each application is considered on its merits, taking into account the individual characteristics of the development. For all strategic planning applications case-specific energy comments for each development are provided at Stage 1 and 2 of the GLA planning process by GLA energy officers to ensure applications comply with London Plan policy. However, for the avoidance of doubt, energy assessments must:…

- *report estimated site-wide regulated CO_2 emissions and reductions (broken down for the domestic and non-domestic elements of the development), expressed in tonnes per annum, after each stage of the energy hierarchy*
- *demonstrate how the zero carbon target for major domestic and non-domestic development will be met, with at least a 35% on-site reduction beyond Part L 2013 and proposals for making up the shortfall to achieve net zero carbon, where required*
- *commit to reducing regulated CO_2 emissions by 10 percent below those of a development compliant with Part L 2013 of the Building Regulations through energy efficiency measures alone, and by 15% for non-residential applications"*

19.20 Therefore, as a "major" application, the target reduction on CO_2 emissions for the Proposed Development, according to the GLA's requirements, is 35% reduction below the Part L 2013 Baseline and Zero Carbon for both Domestic and Non-Domestic Areas combined, including 10% reduction in regulated emissions through energy efficiency measures for Domestic Areas, and 15% for Non-Domestic Areas.

19.21 The London Plan recognises that energy efficiency should come before energy supply considerations and has suggested a simple strategy known as the Mayor's Energy Hierarchy, which is described in Policy SI 2. The process follows good practice in the design of low carbon buildings and comprises four stages and order of application:

1. Use Less Energy (Be Lean);
2. Supply Energy Efficiently (Be Clean);
3. Use Renewable Energy (Be Green); and
4. Offset

[12] GLA (2020) Energy Assessment Guidance – Greater London Authority guidance on preparing energy assessments as part of planning applications DRAFT (April 2020).

19.22 This strategy puts energy efficiency/conservation measures first in order to reduce the demand for energy, 'Be Lean'. Following this, consideration must be given to supplying the resultant reduced energy demand as efficiently as possible, 'Be Clean'. Then, sources of renewable energy should be examined, 'Be Green'. Finally, emissions should be offset.

19.23 Policy GG6 'Increasing efficiency and resilience' states:

"To help London become a more efficient and resilient city, those involved in planning and development must:

A seek to improve energy efficiency and support the move towards a low carbon circular economy, contributing towards London becoming a zero-carbon city by 2050

B ensure buildings and infrastructure are designed to adapt to a changing climate, making efficient use of water, reducing impacts from natural hazards like flooding and heatwaves, while mitigating and avoiding contributing to the urban heat island effect…".

Whole Life-Cycle Carbon Assessments Guidance Pre-consultation draft[13]

19.24 This guidance document explains how to prepare a Whole Life-Cycle Carbon (WLC) assessment in line with Policy SI 2 of the London Plan.

19.25 It defines Whole Life-Cycle Carbon (WLC) emissions as the carbon emissions resulting from the construction and the use of a building over its entire life, including its demolition and disposal. As such they capture a building's operational carbon emissions from both regulated and unregulated energy use, as well as its embodied carbon emissions, i.e., those associated with raw material extraction, manufacture and transport of building materials, construction and the emissions associated with maintenance, repair and replacement as well as dismantling, demolition and eventual material disposal.

19.26 The draft guidance confirms that the Mayor's net zero-carbon target continues to apply to the operational emissions of a building. The WLC requirement is therefore not subject to this target but, as set out in London Plan Policy SI 2, planning applicants are required to calculate the embodied emissions of the development, as well as the operational emissions, and demonstrate how these can be reduced as part of the WLC assessment.

19.27 The guidance confirms that planning applicants should continue to follow the GLA's Energy Assessment Guidance to assess and reduce operational emissions and insert the relevant information into the WLC assessment.

19.28 It should be noted that this assessment is not intended as a WLC in line with the draft guidance but is a holistic greenhouse gas assessment designed to satisfy the requirements of the EIA Regulations

[13] GLA (2020) Whole Life-Cycle Carbon Assessments guidance Pre-consultation draft (April 2020).

2017. The scope of this assessment goes beyond the requirements of the GLA WLC approach and does not specifically follow the guidance in producing the assessment. However, a WLC assessment has been completed for this Application, and for consistency this assessment uses outputs from the WLC assessment where relevant[14].

London Environment Strategy[15]

19.29 The London Environment Strategy, published in May 2018, sets out an action plan for environmental improvement in London up to 2050 and covers a range of core environmental aspects including energy and climate change, air quality, green infrastructure, waste and noise.

19.30 The strategy sets a series of targets, including the aim to make London a zero carbon city by 2050; reiterating the same commitment as is included in the draft New London Plan. The strategy sets out a series of measures designed to achieve this aim, which are focussed upon delivering zero-carbon energy, zero-carbon transport and zero-carbon development. The strategy also sets out plans for retro-fitting existing buildings to enable them to be considered to be zero-carbon.

Local Policies

19.31 The London Borough of Richmond upon Thames Local Plan[16] sets out the Borough's key planning policies which will, within the broader context of the London Plan, determine the future development of Richmond upon Thames over the next 15 years. The Strategy includes the following policies with relevance to greenhouses gases and climate change.

19.32 Policy LP20 'Climate Change Adaptation':

"A. The Council will promote and encourage development to be fully resilient to the future impacts of climate change in order to minimise vulnerability of people and property.

B. New development, in their layout, design, construction, materials, landscaping and operation, should minimise the effects of overheating as well as minimise energy consumption in accordance with the following cooling hierarchy:

1. *minimise internal heat generation through energy efficient design*
2. *reduce the amount of heat entering a building in summer through shading, reducing solar reflectance, fenestration, insulation and green roofs and walls*
3. *manage the heat within the building through exposes internal thermal mass and high ceilings*

[14] Hoare Lea, 2022. Former Stag Brewery Whole Life Cycle Assessment

[15] Greater London Authority, 2018. London Environment Strategy

[16] London Borough of Richmond upon Thames, 2018. Local Plan

4. *passive ventilation*
5. *mechanical ventilation*
6. *active cooling systems (ensuring they are the lower carbon options).*

…."

19.33 Policy LP22 'Sustainable Design and Construction':

"A. Developments will be required to achieve the highest standards of sustainable design and construction to mitigate he likely effects of climate change. Applicants will be required to complete the following:

1. *Development of 1 dwelling unit or more, or 100sqm or more of non-residential floor space (including extensions) will be required to complete the Sustainable Construction Checklist SPD. A completed Checklist has to be submitted as part of the planning application.*
2. *Development that results in a new residential dwelling, including conversions, change of use, and extensions that result in a new dwelling unit, will be required to incorporate water conservation measures to achieve maximum water consumption of 110 litres per person per day for homes (including an allowance of 5 litres or less per person per day for external water consumption).*
3. *New non-residential buildings over 100sqm will be required to meet BREEAM 'Excellent' standard.*
4. *Proposals for change of use to residential will be required to meet BREEAM Domestic Refurbishment 'Excellent' standard (where feasible).*

Reducing Carbon Dioxide Emissions

B. Developers are required to incorporate measures to improve energy conservation and efficiency as well as contributions to renewable and low carbon energy generation. Proposed developments are required to meet the following minimum reductions in carbon dioxide emissions:

1. *All new major residential developments (10 units or more) should achieve zero carbon standards in line with London Plan policy.*
2. *All other new residential buildings should achieve a 35% reduction.*
3. *All non-residential buildings over 100sqm should achieve a 35% reduction. From 2019 all major non-residential buildings should achieve zero carbon standards in line with London Plan policy.*

Targets are expressed as a percentage improvement over the target emission rate (TER) based on Part L of the 2013 Building Regulations.

C. This should be achieved by following the Energy Hierarchy:

1. *Be lean: use less energy*
2. *Be clean: supply energy efficiently*
3. *Be green: use renewable energy*

Decentralised Energy Networks

D. The Council requires developments to contribute towards the Mayor of London target of 25% of heat and power to be generated through localised decentralised energy (DE) systems by 2050. The following will be required:

1. *All new development will be required to connect to existing DE networks where feasible. This also applies where a DE network is planned and expected to be operational within 5 years of the development being completed.*
2. *Development proposals of 50 units or more, or new non-residential development of 1000sqm or more, will need to provide an assessment of the provision of on-site decentralised energy (DE) network and combined heat and power (CHP).*
3. *Where feasible, new development of 50 units or more, or new non-residential development of 1000sqm or more, as well as schemes for the Proposed Sites identified in this Plan, will need to provide on-site DE and CHP; this is particularly necessary within the clusters identified for DE opportunities in the borough-wide Heat Mapping Study. Where on-site provision is not feasible, provision should be made for future connection to a local DE network should one become available.*

Applicants are required to consider the installation of low, or preferably ultra-low, NOx boilers to reduce the amount of NOx emitted in the borough.

Local opportunities to contribute towards decentralised energy supply from renewable and low-carbon technologies will be encouraged where appropriate.

Retrofitting

E. High standards of energy and water efficiency in existing developments will be supported wherever possible through retrofitting. Householder extensions and other development proposals that do not meet the thresholds set out in this policy are encouraged to complete and submit the Sustainable Construction Checklist SPD as far as possible, and opportunities for micro-generation of renewable energy will be supported in line with other policies in this Plan."

APPENDIX 19.2
EXTRACT FROM THE LONDON ENVIRONMENT STRATEGY IMPLEMENTATION PLAN

19.2 Extract from the London Environment Strategy Implementation Plan

Budget	Carbon budget level ($MtCO_2e$)					Reduction below 1990 levels
	Total	Homes	Workplaces	Transport	GLA Group	
2015	33.9	12.1	13.5	8.3	0.16	25%
2018-22	27.1	9.5	10.3	7.3	0.13	40%
2023-27	22.4	7.8	7.9	6.7	0.10	50%
2028-32	18.0	6.5	6.0	5.5	0.08	60%

Source: GLA (2017)