

New Southwark Plan

Energy Background Paper Addendum

March 2021

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1. Introduction

1. This is an addendum to the New Southwark Plan's Energy Background paper prepared for The London Borough of Southwark in June 2020 which aggregated and provided a brief synopsis of the relevant legislation, regulation and guidance impacting Local Authorities associated with Energy and Climate Change.
2. This addendum addresses comments, feedback and some policy developments which have been received or have taken place since the initial paper's publication. It provides factual updates and clarifications to previous information to further assist with the development and implementation of planning policy by the London Borough of Southwark as part of delivering the New Southwark Plan.
3. The purpose of this Energy Background Paper Addendum is to:
 - Explain legal compliance with relevant Climate Change legislation, specifically the Planning and Compulsory Purchase Act (2004 as amended) and the Climate Change Act 2008.
 - Set out an updated policy context for Climate Change policy

- Provide clarity on the emissions data underpinning the Energy Background Paper and policies in the New Southwark Plan
- Explain the direction of travel for future Energy and Climate Change related policy.

COVID – 19

4. This addendum was instigated during the global coronavirus pandemic (also known as COVID 19). Forecasting techniques, such of those used in this paper are by their nature based on historic data, taking a review ‘backwards’ to identify trends which are used to forecast forwards. It is highly likely that economic, societal, and demographic changes from the crisis will impact energy consumption and production at every level of society. However, these effects are not yet reflected (and are likely not to be yet fully recorded) in the datasets commonly used in energy projections. Therefore, for the purpose of this paper analysis has continued with existing data available from before the Coronavirus pandemic with projections made accordingly. In time it is acknowledged that the assumptions made will require revisiting with updated data.

Energy and carbon terminology

5. For clarity, the linkage between energy, carbon and the terminology to be used in this paper is defined within this section.
6. A large proportion of energy consumption within the UK is linked back to the consumption of traditional fossil fuels, coal, oil and gas. A lesser but increasing proportion of energy is met from renewable energy sources. These are defined by the IPCCi as bioenergy, direct solar energy, geothermal energy, hydropower, ocean energy, and wind energy. Other energy systems may be considered low or zero carbon, but not renewable e.g. Nuclear energy.
7. Where fossil fuel is consumed this is in the form of combustion. Combustion inevitably leads to the formation of combustion by products, which include (amongst other items) Carbon Dioxide, Nitrogen Oxides and particulates. Note that all forms of combustion have similar impacts, including some of those listed as ‘Renewable’ above.
8. Carbon dioxide, as will be made clear in section 3 is a gas linked to climate change. Nitrous oxides are not only linked to climate change but also in certain chemical forms to air quality.
9. Therefore, as this document will demonstrate the type and form of energy consumption at a local level is directly linked to larger local, national, regional and

international environmental impacts. Local planning policy which impacts energy consumption will therefore also have consequences on these wider targets.

10. To statistically 'normalise' the impacts of different fuels and greenhouse gases this paper converts all energy consumption into a **Carbon Dioxide Equivalent (CO₂e)** emissions, in line with IPCC Metrics and Methodology.
11. Energy consumption is intrinsic from the fuels we use directly, through to the products we buy, and therefore also requires a system boundary to define it. Within this report the Green House Gas Protocol is used to break emissions into 3 Scopes.
 - Scope 1 – GHG emissions from sources located within the city boundary e.g. gas consumption for heating in buildings
 - Scope 2 – GHG emissions occurring as a consequence of the use of grid supplied electricity, heat, steam and/or cooling within the city boundary
 - Scope 3 – All other GHG emissions that occur outside the city boundary as a result of activities taking place within the city boundary e.g. the production of food
12. This paper will only consider **Scope 1 and 2 emissions** within the London Borough of Southwark. With respect to policy changes, this paper currently only considers energy policy effecting emissions from the built environment, though this may change upon future development and assessment of the evidence base.

2. Planning Policy Context

Climate Change - International Policy Context

Update to UK Nationally determined Contributions

13. On the 12 December 2020 the UK communicated an update to its Nationally Determined Contributions to the United Nations Framework Convention on Climate Change. The UK's previous target was a 53% reduction on 1990 emissions levels by 2030, the updated target is a 68% reduction on 1990 emissions levels by 2030. This is not yet a statutory target.
14. Further details are available at the following press release:

<https://www.gov.uk/government/news/uk-sets-ambitious-new-climate-target-ahead-of-un-summit>

Upcoming UN Climate Change Conference UK 2021 (COP26)

15. The Cop26 UN Climate Change Budget Environmental and development groups have been pushing the prime minister to opt for a stretching target of cutting emissions

by 75% by 2030, compared with 1990 levels, which would have put the UK at the forefront of developed countries in fighting the climate crisis.

National Policy Context

Planning White Paper (August 2020)

16. In August 2020 the UK government released the Planning White Paper. This document sets out a step change in the preparation of planning policy, and most specifically the process for adopting and amending Local Plans. This paper proposes a quicker local plan preparation period that will require local planning authorities to undertake more frequent updates to the local plans with a rolling evidence base. It also encourages early reviews of specific sections of policy rather than a full review every 5 years.

Proposed Changes to Building Regulations Part L

17. Since the publication of the evidence paper a consultation response to changes to the building regulations has been published, by the government, and a second consultation opened

18. The Part L Consultation response is available at the following location:

<https://www.gov.uk/government/consultations/the-future-homes-standard-changes-to-part-l-and-part-f-of-the-building-regulations-for-new-dwellings>

19. The second consultation is currently open. This sets out proposals for a Future Building Standard addressing non-domestic buildings, existing homes and mitigations against overheating in residential buildings.

20. The second consultation is available at the following location.

<https://www.gov.uk/government/consultations/the-future-buildings-standard>

Update to the Carbon Budget

21. The UK's Climate Change Committee published its Sixth Carbon Budget report in December 2020, and was presented and prepared by the Climate Change Committee based on an extensive programme of analysis, consultation and consideration by the Committee and its staff, building on the evidence published last year. This is not yet a statutory target.

22. In this addendum to the Energy background paper, we have produced a roadmap to future energy policy to meet the emerging new targets for carbon emissions. It should be noted that the programme of actions anticipated involves activities beyond the planning system.

Regional Context

London Plan (2021)

23. Under the 2007 amendments to the Greater London Authority Act 1999, the Mayor of London has a duty to contribute towards the mitigation of, or adaptation to, climate change in the United Kingdom. Through the London Plan, the Mayor is able to ensure that major new developments and major refurbishments requiring planning consent are designed to help mitigate against climate change and are resilient to its impacts.
24. The London Plan (2021) has now been published and is now legally part of Southwark's Development Plan and must be taken into account when planning decisions are taken in any part of Greater London. Planning applications should be determined in accordance with the London Plan, unless there are sound planning reasons (other material considerations) which indicate otherwise.
25. London Policy GG6 'Increasing efficiency and resilience' confirms the target of London becoming a zero-carbon city by 2050. This target legally complies with the Climate Change Act 2008 as amended, as it is consistent with the UK's national 2050 net-zero target.
26. London Plan Policy SI2 'Minimising greenhouse gas emissions' requires major development to be net zero-carbon. This means that development should reduce greenhouse gas emissions in operation and minimising both annual and peak energy demand.
27. The adopted policies in the London Plan (2021) are an appropriate approach to addressing the Mayor's responsibilities and ambitions in respect of energy and climate change and have been found sound.
28. The New Southwark Plan is in general conformity with the London Plan as the New Southwark Plan's 2050 net zero carbon target is consistent with the London Plan net zero target.

1.5C Compatible Climate Action Plan (2018)

29. The Mayor's 1.5C Compatible Climate Action Plan (2018) forms part of the London Plan evidence base and sets out how London will become a net zero carbon city with action required from the Mayor, businesses, communities, boroughs and national government. The Action Plan is underpinned by further technical reports:
 - Building Energy Efficiency (2018). A report which sets out how building energy efficiency can be achieved.

- Zero Carbon Energy Systems (2018). A report that undertakes an analysis of decarbonisation pathways that inform London's strategy on energy and climate using modelled scenarios for electrification, decarbonisation of gas, decentralisation of energy and a patchwork solution.
- Technical Assistance to Deliver London's Climate Action Plan (2018), which sets out where there are opportunities to further adapt to the impacts of climate change

https://www.london.gov.uk/sites/default/files/1.5_action_plan_amended.pdf

London Environment Strategy (2018)

30. The Mayor's London Environment Strategy (May 2018) commits London to being a zero carbon city by 2050. The London Energy and Greenhouse Gas Inventory (LEGGI) regional and borough datasets published on an annual basis by the GLA allow London's emissions to be monitored. These datasets underpin the Strategy and the London Plan.

Southwark Context

31. In July 2020, the council published its draft Climate Change Strategy that sets out the steps that need to be taken to meet the council's 2019 climate emergency declaration to do all it can to make the borough carbon neutral by 2030. The draft Climate Change Strategy explains the approach needed to reducing carbon and protecting biodiversity in Southwark. It sets out the principles that we want to protect whilst delivering this strategy – inclusivity, transparency and ambition. It also sets out the actions we believe need to happen in different areas (buildings, energy, travel, biodiversity, and consumption) to become carbon neutral by 2030 and protect our plants and wildlife. Public consultation on the draft strategy took place during autumn 2020:

<http://moderngov.southwark.gov.uk/documents/s89802/Appendix%201%20Climate%20strategy.pdf>

32. As decided at Environmental Scrutiny Committee in July 2020, a recommendation has been added to note the significance of the New Southwark Plan in relation to the delivery of Southwark's overall climate goal, and that the Commission is keen to ensure that Southwark delivers on its ambitions for both zero/low carbon growth and improvements to biodiversity through Supplementary Planning Documents and that these should be developed as a matter of urgency.
33. The 2030 net zero carbon target is not a statutory target but is an ambition the council has declared. The Planning division will work towards this target in the early review. As recognised above, planning is a contributor to the Council's emerging wider strategy for addressing climate change.

3. New Southwark Plan policy compliance

34. Climate Change is a 'golden thread' and central theme to the New Southwark Plan. The council has updated the New Southwark Plan policies and supporting text with minor factual modifications that clarify and highlight and the importance of tackling Climate Change through mitigation and adaptation. These minor factual modifications are listed in the Proposed Table of Changes.

Planning and Compulsory Purchase Act (2004) (as amended)

35. The Planning and Compulsory Purchase Act (2004) sets out in section 19 (1A) that:

“Development plan documents must (taken as a whole) include policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change.”

36. Responding to climate change through adaptation and mitigation is central to the New Southwark Plan.
37. The New Southwark Plan is in compliance with the Act specific to planning because it has policies to adapt and mitigate to climate change as set out in the Act. There are a number of policies that implicitly and explicitly adapt and mitigate to climate change.
38. Appendix 1 of this addendum sets out a table of how NSP policy tackles climate change through National Planning Practice Guidance (NPPG), the London Plan and supporting guidance, and the only adopted Neighbourhood Plan in Southwark the Southbank and Waterloo Neighbourhood Plan. Appendix 1 sets out how Strategic, Implementation and Development Management policies have adapted and mitigated to climate change.
39. The London Plan (2021) that forms part of Southwark's development plan is also legally compliant with the requirements of the Act as it has been found sound and is now adopted.
40. The relevant evidence base from the London Plan to Southwark is the Energy topic paper, the London Heat Map, and the Integrated Impact Assessment for the London Plan as set out in Appendix 1. There are relevant evidence base documents for green infrastructure and sustainable infrastructure as well in the EIP Library for the Draft London Plan.

Climate Change Act (2008) (as amended)

41. The Climate Change Act (2008) is national legislation that applies to governance and institutions to ensure that they are addressing Climate Change. It is not legislation that is specific to planning.

Point 1 of the Climate Change Act (2008) as amended sets out in point (1):

“It is the duty of the Secretary of State to ensure that the net UK carbon account for the year 2050 is at least [F1100%] lower than the 1990 baseline.”

42. As a sector, the planning system partly contributes to meeting the national 2050 target as set out in the Climate Change Act. The New Southwark Plan aims to meet the statutory 2050 net carbon zero target by proposing relevant development policies that mitigate and adapt to climate change, and is set out in the Publication London Plan (2020).

National and Regional commitments

43. The London Plan (2021) is legally compliant with the above Acts.
44. The London Plan (2021) has been found sound and forms part of the development plan for Southwark, and this include the evidence base for the London Plan (2021).
45. Policy GG6 Increasing efficiency and resilience point A sets out how the London Plan will contribute towards London becoming a zero-carbon city by 2050. LB Southwark is therefore in general conformity with the London Plan is also meeting this target through mitigation and adaptation to climate change.

Emerging legislation

46. As set out above in the national policy context there are a number of emerging targets and legislation relating to carbon emissions and climate change. As legislation evolves and targets are reviewed, further evidence and detail will need to be provided to support policies to address the changing context, legislation and targets.

4. Data and Baseline Local context: London Borough of Southwark

Current Emissions

47. Large scale emissions assessments are normally some form of ‘estimate’ owing to the complexity of accounting for all sources. As a result there are often differences between datasets and reputable sources will explicitly acknowledge this as well as potentially quantifying them.

48. Current Emissions in the evidence paper were provided from the London Energy and Greenhouse Gas Inventory (LEGGI) available at:

<https://data.london.gov.uk/dataset/leggi>

49. The London Energy and Greenhouse Gas Inventory (LEGGI) is a database managed by the GLA and sets out how much energy is used by London’s homes, workplaces and transport and measures how London is contributing to climate change with data on greenhouse gas emissions.

50. The 2017 Interim results remain the most current data.

51. LEGGI uses sub-regional energy and carbon dioxide equivalent data published from two sources:

- The UK Government Department of Business Energy and Industrial Strategy (BEIS)
- The London Atmospheric Emissions Inventory (LAEI)

52. It is acknowledged that the LEGGI estimates may differ from BEIS regional data owing to different approaches in methodology.

53. LEGGI is produced on an annual basis to measure progress against the Mayor of London’s carbon reduction target for London.

54. The national estimates provided by the UK Government Department of Business Energy and Industrial Strategy (BEIS) are used as the baseline for monitoring the Climate Change Act net zero target. These are published by BEIS in conjunction with the Office of National Statistics. The estimates provide the most reliable and consistent breakdown of CO₂ emissions across the country, using nationally available data sets going back to 2005.

<https://www.ons.gov.uk/economy/environmentalaccounts/articles/netzeroandthedifferentofficialmeasuresoftheuksgreenhousegasemissions/2019-07-24>

<https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2019>

55. A regional breakdown is published by BEIS, including on a local authority basis.

<https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2018>

56. BEIS and the ONS states that these estimates are to assist those wishing to understand and assess changes in local authority emissions. It is also made clear that they differ from the national UK inventory, both through excluding some data and differences in methodology applied, with details provided in the supporting documentation. For example:

- Domestic Shipping
- Domestic Aviation
- Military transport

57. The above are three emissions sources accounted for nationally (therefore against national climate change targets) but are not present in the local datasets.

58. No data for the local authority breakdown is available from the BEIS/ONS dataset prior to 2005, with the latest published dataset being 2018.

59. The estimated emissions for The London Borough of Southwark by BEIS are presented in Table 1 with a comparison to the LEGGI dataset.

Table 1: Comparison between LEGGI and BEIS local authority estimates of Carbon Dioxide emissions for the London Borough of Southwark

Year	LEGGI, Total kt (CO₂e)	BEIS Local Authority CO₂ emissions estimates (kt CO₂)
2018	N/A	976.8
2017	1,013 (interim)	1,022.4
2016	1,070	1,101.4
2015	1,195	1,204.7
2014	1,170	1,263.8
2013	1,406	1,456.7
2012	1,406	1,536.8
2011	1,318	1,399.0
2010	1,502	1,570.0
2009	N/A	1,496.2
2008	N/A	1,679.6
2007	N/A	1,698.5
2006	N/A	1,738.6
2005	N/A	1,726.5

A graphical comparison of the two metrics is provided in Figure 1.

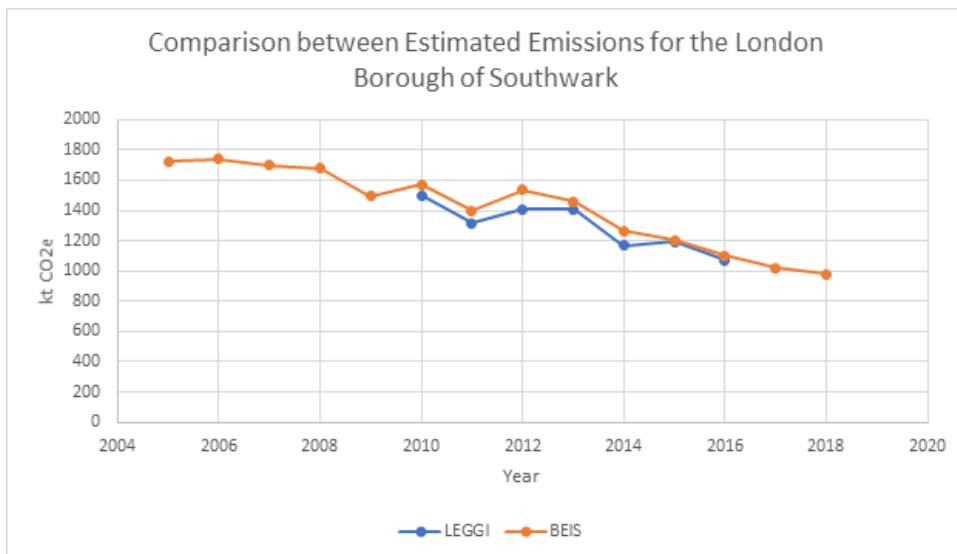


Figure 1: A comparison of estimated emissions from LEGGI and BEIS sources.

60. It may be observed that these are comparable, but not identical.
61. Limitations on the robustness of the BEIS statistics at a local authority level are set out within the statistical paper, with a recognition that BEIS regional statistics are considered more robust than the Local Authority level. (p4, UK local authority carbon dioxide emissions estimates (2018))
62. The BEIS local authority statistics are designed to be as consistent as possible with the national inventory for the UK, but do not absolutely directly map to this.
63. Similarly, the national target for net zero carbon by 2050 allows for some emissions in one area (either geographically, or by end usage) to be allowed in return for overperformance (e.g. carbon absorption) in another area. These are national targets, which would require to some extent a nationally co-ordinated effort. For both these reasons it is difficult to directly map a national target directly on to a local authority area, and then link this to a local new build housing performance policy as:
- There is not understood to be a local authority dataset for emissions which is identical in construction and scope to the national inventory for the UK.
 - There is not understood to be any current guidance on the allowable relative performance of local authorities to achieve a national Net Zero Target.
64. As stated in section 8 of the energy background paper, the SCATTER analysis undertaken indicates that bulk of emissions in the London Borough of Southwark occur in existing buildings, once low carbon emissions are achieved in new building stock. This indicates the likely limits on achieving a local or a national carbon target through local policy action in the planning system which mainly (although not

exclusively) delivers in relation to new build development. To quote the evidence background paper:

It is likely that further policy intervention at all levels of government will be required for the London Borough of Southwark to achieve the Statutory target under the Climate Change Act 2019.

Carbon Reduction Targets

65. For clarity, the London Borough of Southwark is committed to discharging any statutory requirements it has to assist the government in achieving the national target of a 100% reduction of emissions in greenhouse gases from 1990 levels by 2050 as defined by the amended Climate Change Act (2019).
66. The London Borough of Southwark is also committed to assisting the Mayor of London in achieving its regional targets for reductions in London's carbon dioxide emissions to net zero by 2050.
67. It is understood that the regional emissions against which the London targets are monitored use the LEGGI database, therefore this has been proposed as a suitable evidence base for historic performance of the London Borough of Southwark.
68. This addendum allows for a comparison of this dataset against an alternative national source from BEIS and the Office of National Statistics.

Forecast Energy Consumption and Emissions

69. The SCATTER tool is utilised in the energy paper to forecast energy consumption, emissions, and potential pathways. The SCATTER tool is neither based directly upon LEGGI, nor the BEIS regional estimations, it is a third methodology to estimate energy consumption and emissions in an area. As a result, its estimations are likely to also not directly map to LEGGI or BEIS estimates for a given year although will be comparable.
70. A link to SCATTER was provided in the Energy Evidence paper and is repeated here (<https://scattercities.com/>)
71. The basis of this methodology is the Global Covenant of Mayors Common reporting framework, available at the following link.

https://www.globalcovenantofmayors.org/wp-content/uploads/2019/04/FINAL_Data-TWG_Reporting-Framework_website_FINAL-13-Sept-2018_for-translation.pdf

The methodology is detailed and available online for review at the following location.

<https://scatter-staging.anthesis.systems/pages/methodology/>

72. Specific alterations were made to the SCATTER model to reflect the potential impact of a direct policy intervention within Southwark, namely the utilisation of heat from the nearby Energy from Waste plant SELCHP. This is an example of how a specific local policy intervention may have an overall impact on carbon emissions, which is not considered in a 'generic' model.
73. To estimate this impact heat supply from the plant was modelled on the basis of an assumed build out of a district heating network over 10 years, with 10% of net available thermal capacity being added each year. This accounted for thermal capacity already connected. Plant thermal capacities, current utilisation and carbon factors for energy were taken from the following publication.

<https://www.southwark.gov.uk/assets/attach/23931/Information-for-Developers-Ver06-1-.pdf>

Differences between methodologies

74. This addendum has provided additional information with regards to the origin of emissions data and the methodologies behind the estimation of these in the interest of transparency with respects to the evidence base. Although it has been stressed that there are different underlying assumptions between the BEIS local authority dataset, the LEGGI data set and the SCATTER modelling, which arise as an inevitable consequence of working with complex and incomplete information it is also important to emphasise some of the similarities between data sources. As an important example, all three use BEIS sub-national energy consumption statistics as part of their analysis. This is regarded as a strong and reputable sources of relevant data
75. Therefore, it is likely that even though the detailed methodology differs between the three techniques, the benchmarks and trajectories provided by them are likely to be broadly consistent and are a useful evidence basis on which to understand historic and current performance, and forecast potential future trajectories, for the purposes of informing local policy setting.

5. Sustainability appraisal

76. The Environmental Assessment of Plans and Programmes Regulations 2004 set out the process that must be undertaken for a Sustainability Appraisal (SEA) regulations for a local plan. The New Southwark Plan Integrated Impact Assessment performs this role and has been prepared in accordance with the regulations. An Addendum to the Integrated Impact Assessment has been prepared for clarity to set out the Baseline Emissions in Southwark. This will include the LEGGI emissions data for Southwark.

77. The IIA will be updated for clarity to set out the Reasonable alternatives considered in terms of Climate Change. The three approaches to Climate Change options considered were:

78. Options testing for target for net zero carbon to address climate change:

Option	Comment
Option 1: No target	By not having a target, there is no requirement or incentive or distinctive to not reduce carbon emissions which does not address the wider aim of the plan to address climate change.
Option 2: 2050 net carbon target (chosen option)	This is a statutory target and the NSP must be in compliance with this as a minimum.
Option 3: 2030 net carbon target (early review – future option)	This is not a statutory commitment and an evidence base needs to be prepared to make this a sound policy. This option will be selected for the Early review.

79. Options testing for carbon reduction onsite target for residential major development:

Option	Comment
Option 1: No target	By not providing a target for residential major development, it does not force development to reduce carbon onsite to address the carbon emergency as there is no mechanism to achieve onsite carbon reduction.
Option 2: London Plan – 35% carbon reduction onsite	This target in the London Plan is published and found sound and forms part of our development plan as a

	minimum requirement.
Option 3: NSP 100% onsite carbon reduction (chosen option)	This encourages onsite reduction in new residential development to be as high as possible. The £95 carbon offset charge in the London Plan is likely to increase as set out in paragraph 9.2.8. The anticipated increase of this carbon price incentivises carbon reduction onsite and where this is not possible, there is a requirement a financial contribution to offset emissions. By increasing the carbon price, it disincentivises carbon offsetting, a balance must be struck between the onsite reduction and the carbon price to secure carbon reduction onsite.

80. Options testing for carbon reduction onsite target for non-residential major development:

Option	Comment
Option 1: No target	By not providing a target for non-residential major development, it does not force development to reduce carbon onsite to address the carbon emergency as there is no mechanism to achieve onsite carbon reduction. This is not supported.
Option 2: London Plan – 35% carbon reduction onsite	This target in the London Plan is published and found sound and forms part of our development plan as a minimum requirement.
Option 3: NSP 40% onsite carbon reduction (chosen option)	A number of non-residential schemes in Southwark are around 40% or higher just by implementing the London Plan policy. LB Southwark by requiring 40% is able to encourage a greater carbon reduction onsite to ensure that new development is working harder to be more efficient, sustainable and reduce carbon in line with the Council’s priorities. We have not received any objections specifically about the 40%.

81. The policy does not address how to tackle emissions on small sites because it was not considered viable at this stage due to the need for technological advances and wider policy legislation from regional and central governance. Small sites are a crucial aspect of reducing carbon emission to be net carbon zero by 2030, and will therefore be explored in the early review of policy P69 Energy.
82. The route LB Southwark has chosen enables us to address the emergency with the evidence we currently have and be legally compliant with PCPA and Climate Change Act whilst also be able to collate data, evidence and emerging contexts and legislations on climate change to do an early review to more effectively address the climate emergency and meet the 2030 target with an early review to ensure that a comprehensive strategy can be assessed and scrutinised before it is implemented to tackle carbon emissions.
83. The London Plan IIA forms part of the evidence base for the Southwark's development plan and ensures the London Plan meets its regulatory requirements. The London Plan (2021) and its evidence base has been found sound.

Viability

84. The Viability Background Paper (document EIP20) sets out our approach to viability testing and how this has been achieved. It details The 2019 study also undertakes further sensitivity testing on the November 2017 viability work to consider the cost implications associated with design standards as set out in both the emerging New Southwark Plan and the adopted London Plan. In particular, it considers the requirements for energy, accessible homes, water efficiency, car parking and electric vehicle charging. The 2017 study provides further details of these inputs, it includes allowances for MCIL2 and the updated Southwark CIL as appropriate.
85. The Housing Policy Viability Update Study (2017) (document EIP17) sets out the viability testing of a number of different typologies with the cost incurred of the policies in the NSP as of 2017.
86. The costs exclude any contribution to off-site energy strategies to meet carbon reductions. For residential development, an allowance of 0.40% should be added for SUDs and 2.5% add for existing energy policies. For Commercial uses, an allowance of 0.40% should be added for SUDs and 2.5% add for existing energy policies.
87. With regard to Energy policy, as this is a new requirement there is no historic information available to assess the cost impact. We arrived at our assessment based on a review of several publications- Zero Carbon Hub in partnership with Sweett- "Cost analysis of Achieving Zero Carbon Standard" published February 2014 and also published in Building Magazine dated 7 th February 2014 and "Greater London Housing Standards Review Viability Assessment " by David Locke Associates, Hoare Lea and Gardiner and Theobald dated May 2015 From Sweett's paper the average UK cost to achieve zero carbon is circa £3100 per unit (based on an average of houses and apartments at 2016 price levels) and when you add a London regional

weighting this is circa £3900 per unit for London which equates to circa 2% mark up on the average rates. When you consider the development corporation is within Greater London in our opinion a mark -up of 2.5% would appear appropriate to achieve the required CO2 reduction.

6. Delivery

84. The London Plan (2021) sets out that all major development should be net zero. This is achieved through carbon reduction onsite and through carbon offsetting using the carbon price tariff, as established in the London Plan as £95 per ton.
85. From the date of adoption of the London Plan LB Southwark have required non-residential development to meet 40% carbon reduction onsite against Part L Building Regulations 2013.
86. The Published London Plan (2020) has set out in policy SI 2 Minimising greenhouse gas emissions Point C a requirement for major development to achieve a minimum on-site reduction of at least 35 per cent beyond Building Regulations.
87. Paragraph 2.5.6 sets out:
 88. *To meet the zero-carbon target, an on-site reduction of at least 35 per cent beyond the baseline of Part L of the current Building Regulations is required.154 The minimum improvement over the Target Emission Rate (TER) will increase over a period of time in order to achieve the zero-carbon London ambition and reflect the costs of more efficient construction methods. This will be reflected in future updates to the London Plan.*
89. NSP Policy P69 Energy requires non-residential development to achieve a carbon reduction onsite of a minimum of 40%, and any shortfall should be secured through planning obligations or a financial contribution.
90. The GLA Energy Monitoring Report 2019 sets out that:
 91. *New developments in London continue to achieve far higher carbon savings than required by national policy with developers committing to an overall carbon emissions reduction of 40.6 per cent beyond the 2013 Building Regulations.*
92. The baseline data sets out that the average in London for carbon reduction achieved onsite.
93. The additional 5% we require is a slight difference to the London Plan but addresses the urgency of the need to respond in planning policy to Climate Change.
88. By being more energy efficient onsite you reduce carbon emissions onsite further and there are less emissions to offset, and therefore a smaller payment into carbon offset fund.

89. To aid in the implementation of the development plan, LB Southwark employs consultants to assess and scrutinise Energy Statements to ensure that development is being ambitious and is policy compliant, as well as reducing carbon emissions onsite wherever possible.
90. LB Southwark has not been implementing P69 Energy until the date of adoption of the Plan. The schemes in the table 2 below have exceeded the required 35% in the London Plan without further policy intervention from LB Southwark.
91. There are a number of non-residential schemes that are far exceeding the London Plan target minimum of 35%, as well as the 40% as set out in P69 Energy.
92. There are also a number of schemes in Table 2 that are achieving around 40% without the incentive to meet 40%.
93. Table 2 does not provide an exhaustive list of approved schemes in LB Southwark. The list includes non-residential and mixed use schemes that have achieved a high carbon onsite reduction against Part L Building Regulation 2013. These are considered good practice schemes that the implementation of the policy P69 Energy will build upon to further reduce carbon onsite to meet the target for net carbonzero by 2050. It is acknowledged that to meet this target changes in technology and the wider legislative context are needed.

Table 2: Consented and Live Application for non-residential and mixed used major applications in Southwark

Application reference	Site Address	Planning Application Description	Land Use	% overall onsite reduction against 2013 Building Regulations Part L	% non-residential onsite reduction	Carbon offset payment	Percentage above 35% required in London Plan	Percentage above 40%	Status
20/AP/0556	160 Blackfriars Road	Erection of an eight storey building with basement, comprising a hotel (Class C1), flexible commercial or community unit (Class B1/D1), retail floorspace (Class A1/A3), creation of public space, landscaping and associated works. Works to the existing office building at ground and roof levels (including a new rooftop terrace, balustrades and PV panels); elevational	Non-residential mixed use (hotel and office space)	67.4	67.4	£60 per ton Anticipated Total £171,900	+32	+27	Approved September 2020

		alterations; and alterations associated with the creation of a new entrance on the Blackfriars Road elevation.							
19/AP/1867	Dulwich Hamlet FC	Redevelopment of the Dulwich Hamlet Football (Champion Hill) Stadium, including the demolition of existing buildings, and use of land at Greendale, to provide: - the erection of a new stadium with relocated playing pitch with associated floodlighting and boundary treatment, and part two-part three storey clubhouse building with sports and leisure facilities, with capacity for 4,000 spectators (Use Class D2); - the construction of a multi-functional kickabout space and associated boundary treatment; - the erection of a series	Mixed use development 219 residential units And D2	66	67	£60 per ton Anticipated Total £142,320	+32	+27	Approved July 2020

		of buildings between four and six storeys in height to provide 219 residential dwellings, (Use Class C3); - associated car parking, cycle parking, refuse storage and access road; - the widening and greening of a public route with associated hard and soft landscaping; - the relocation of telecommunications equipment and re-provision of the substation together with plant and equipment.							
19/AP/2307	Daisy Business Park 19-35 Sylvan Grove London SE15 1PD	Demolition of existing buildings and redevelopment of the site to provide a mixed use development comprising of 219 residential dwellings (Use Class C3) and 3,088 sqm (GIA); commercial workspace (Use Class B1) within	Non-residential	61 non-residential 70 – residential	61	£60 per ton Anticipated Total £116,180	+26	+21	Granted October 2020

		two buildings of 5 storeys (24.55m AOD) and 32 storeys (106.43m AOD); and associated car and cycle parking, landscaping, and public realm and highways improvements.							
19/AP/0750	5-9 Rockingham Street & 2-4 Tiverton Street SE1 6PF	Demolition of existing buildings and erection of a 21-storey building (max height 70.665m AOD) with basement and associated roof plant to provide 6,042.3sqm (GIA) of new commercial floor space and redevelopment of 3 railway arches to provide 340.1sqm of flexible commercial space (A1,B1,D1,D2) with associated cycle parking storage, waste/recycling stores and new public realm.	Non-residential	61	61	£60 per ton Anticipated Total £35,960	+26	+21	Granted September 2019

20/AP/3013	Colechurch House London Bridge Walk London Southwark	Redevelopment of the site to include demolition of Colechurch House, pedestrian footbridge and walkway and erection of an elevated 22-storey building (+ 4-storey basement) above a public park and providing office floorspace, retail floorspace, restaurant/café floorspace, leisure floorspace (all Use Class E), theatre and a bar (Sui Generis), delivered alongside public realm improvements, roof gardens, cycle parking, servicing, refuse, plant areas and other associated works incidental to the development	Non-residential	55%	55%	Under negotiation	+20	+15	Live application Under consideration
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20/AP/2701	671-679 Old Kent Road London Southwark SE15 1JS	Demolition of all existing structures and erection of a part 10, part 12 storey plus basement mixed-use development comprising 257sqm flexible Class E floorspace (Commercial, business and service), and 267 purpose-built student accommodation rooms with associated amenity space and public realm works, car and cycle parking, and ancillary infrastructure	Mixed use development Student housing and commercial	70.1% Student housing 53.2% commercial section	53.2%	Under negotiation	+18.2	+13.2	Live application Under consideration
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20/AP/1537	Blackfriars Crown Court 1-15 Pocock Street London Southwark SE1 0BT	Development of site, involving part demolition, alterations and extensions to the existing building and basement, including the change of use from Class D1 to Class B1, to provide a seven-storey building with rooftop pavilions comprising: office floorspace (Class B1); retail spaces (Class A1); a cafe (Class A3); a restaurant (B1/A3); a bar (Class A4/B1); leisure uses including a publicly accessible roof terrace (Class D2); other external amenity spaces and landscaping; a new entrance on Loman Street and route through the building; plant, and; other associated works.	Non-residential	46	46	Under negotiation	+11	+6	Granted November 2020
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17/AP/4612	49-53 Glengall Road London SE15 6NF	Demolition of all existing buildings and structures (excluding some of the facades along Glengall Road and Bianca Road and the industrial chimney) and erection of a part 6, 8 and 15 storey mixed-use development comprising 3,855 sqm (GIA) of flexible workspace (Use Class B1) and 181 residential units (Use Class C3) with amenity spaces and associated infrastructure.	Mixed use development including residential and commercial	45	Not broken down for non-residential	£60 per ton Anticipated Total £245,028	+10	+5	Granted July 2020
18/AP/2295	77-89 Alscot Road London SE1 3AW	Redevelopment of site to provide student housing in a building ranging from 3- to 7-storeys (plus basement) and ancillary bin store, cycle store, laundry and office/reception,	Student housing	44.6	44.6	Under negotiation	+9.5	+4.5	Approved October 2020

		car parking, substation, associated landscaping, and alterations to the vehicle access. Removal of a street tree on Alscot Road and works to the highway.							
18/AP/0196	Land bounded by Ruby Street and Murodch Street and 685-695 Old Kent Road London SE16 1JS	Demolition of existing buildings and erection of and construction of a part 3, part 7, part 22 storey building (76.6m) from ground level with roof top level amenity space, comprising 111 dwellings, 1,151 sqm (GIA) of D1 floorspace for a church with ancillary communal facilities, 2,173 sqm (GIA) of workspace (B1a and B1c) Use Class) and 87 sqm (GIA) of A1/A2/B1 floorspace, with associated	Mixed Use development 111 units and D1/B1a/B1c/A1/A2	41.8	48.04	£60 per ton Anticipated total £153,000	+13.04	+8.04	Granted December 2020

		landscaping, car and cycle parking, servicing and refuse and recycling facilities.							
18/AP/0657	Land At 19 21 And 23 Harper Road 325 Borough High Street And 1-5 And 7-11 Newington Causeway London SE1 6AW	Demolition of existing buildings and redevelopment to provide construction of a part 5, part 7, part 8 and part 13 building a mixed-use development comprising 328 hotel rooms (Class C1) 20 no. residential dwellings (Class C3), offices, workspace and workshops (Class B1), multifunctional community events space (Class B1/D1), retail use (Class A1/A2/A3), 4 no. car parking spaces together with access, cycle parking, hard and soft landscaping	Mixed Use residential and commercial and non-residential	36.79	36.73	£60 per ton Anticipated Total £29,230	+1.73	-3.21	Granted May 2020

		and other associated works incidental to the development.							
18/AP/3246	Land At Cantium Retail Park 520 Old Kent Road	Demolition of existing buildings and redevelopment of the site to provide a new basement level and buildings ranging from 3 to 48 storeys in height (max height 159.05m above ground level) comprising up to 1,113 residential units (Class C3), up to 5,659 sq. m of office floorspace (Class B1(a)), up to 2,228 sq. m of retail floorspace (Class A1), up to 2,336 sq. m of flexible space including use within Classes A1, A3, D1, D2 and / or Sui Generis (Theatre) within Block B and up to 596 sq. m of flexible space within Classes A1, A2 and / or A3 within Block C	Mixed use Residential B1A/A1/A2/D2/D3	37.99	35.73	Under negotiation	+0.73	-4.28	Granted February 2021

		together with associated access, car parking, landscaping and infrastructure works.							
19/AP/7057	Camberwell Lanes Butterfly Walk Shopping Centre And Land To Rear Denmark Hill, Orpheus Street, Daneville Road And Wren Road Camberwell London SE5 8RW	Part redevelopment, part refurbishment of the Butterfly Walk Shopping Centre including the addition of a part 3, part 5 and part 6 storey building fronting Denmark Hill, and the erection of a new part 2, part 3, part 4 and part 8 storey building fronting Daneville Road, erection of new 6 storey building on the corner of Orpheus Street and Daneville Road, to accommodate a mix of: new retail (Classes A1 to A3); 146 residential dwellings (3 x Studio, 34 x 1-bed, 67 x 2-bed and 41 x 3-bed) (Class C3) within three buildings; erection of a new 101-bed hotel	Mixed Use development predominately residential D2	35.1	Not broken down for D2	With £60 per ton Anticipated Total £205,200	+0.1	-4.9	Under consideration

		(Class C1); a new two-screen cinema (Class D2); the creation of a central landscaped shopping area to the rear of the Shopping Centre; the reconfiguration of existing routes into and around the site, and; the partial-removal of the existing surface car parking area and provision of new 32 car parking spaces to including spaces for town centre visitors and disabled parking spaces.							
20/AP/0749	The Aylesham Centre Rye Lane London Southwark SE15	Scoping opinion request for 'Demolition of existing shopping centre building and bus standing area and construction of approximately 7 new buildings up to circa 20 storeys plus basements across the site, approximately 850 - 1,000 new residential	Mixed use development	63	35	Under negotiation	+0.00	-0.5	Live application Under consideration

		<p>dwelling in 85,000sqm of residential floorspace, approximately 12,000sqm of non-residential flexible floorspace including a replacement Morrisons supermarket, public and private amenity spaces, pedestrian and vehicular routes, replacement and expanded bus stand with associated bus driver/operator welfare facilities, replacement bus stops and partial replacement of existing retail car parking at basement level.</p>							
20/AP/1009	25 Lavington Street	<p>Redevelopment of the site including partial demolition of existing buildings and erection of two buildings including basement and above ground development of 10 and 15 storeys (in addition to plant) to provide office use (Class B1), retail use (Class A1), flexible retail and leisure (A1/A3, A3/A4,</p>	Non-residential	35.8	35.8	Under negotiation	+0.8	-4.2	<p>Live application</p> <p>Under consideration</p>

		D2/A3/A4), landscaping, public realm, highway works, disabled car parking, cycle parking, plant and associated works.							
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7. Next Steps – Local Plan Early Review

Strategy moving forward and next steps

94. In light of evolving climate change policy - for example the 6th Carbon Budget, any pre-COP26 policy updates, the 2030 Nationally Determined Contribution (NDC) for carbon as agreed by the Paris Agreement (2020), and the Environment Bill (2019- 2021) - the council's 2019 Climate Emergency declaration, and the anticipated early review of the London Plan (2021), the council is committed to undertaking an early review of energy and environmental policy. An update is required to the evidence base to ensure all new policy is sound, feasible and viable.
95. There are a number of workstreams across council divisions and services that are required to meet the council's declared 2030 net zero carbon target, particularly those relating to carbon emissions from existing buildings. A number of these workstream intersect with Planning and officers will support work collaboratively across the council. It is necessary to recognise that the strategy to meeting this target will require initiatives across a number of divisions and services beyond planning – some of which are within the Council's control and others which are likely to depend upon regional and/or national initiatives.
96. Southwark's Climate Emergency Workstreams that intersect with the New Southwark Plan are:
- Carbon offset fund
 - Establishment and review of Carbon Offset Tariff
 - Governance of Carbon Offset Fund
 - Carbon Offset fund spending
 - New Southwark Plan Adoption
 - Early review of New Southwark Plan in relation to Climate Emergency
 - Namely P69 Energy
 - Other policies that adapt and mitigate against Climate Change
 - Adoption of the Draft Climate Strategy (Council wide strategy)
 - Establishment of District Heat Networks in Southwark
97. The intention is to follow the below roadmap to reach the 2030 target. This may be subject to change.

Indicative Date	Task
February – April 2021	Examination in Public of NSP
2 nd March 2021	London Plan adopted London Plan guidance adopted

	<ul style="list-style-type: none"> ○ Whole Lifecycle Carbon Assessments ○ Circular Economy Statements ○ Be Seen Monitoring
Spring 2021	Prepare updated data schema to assess energy statements and underpin monitoring
Spring 2021	Agreement of carbon offset fund governance
Spring 2021	Create process for community carbon offsetting projects to apply to the fund
Spring 2021	Adoption of Draft Climate Emergency Strategy
Spring-Summer 2021	Drafting of NSP69 Energy for 2030 target
Summer 2021	Funding of carbon offsetting projects – both council and community projects
Summer2021	Feasibility, viability and deliverability testing of draft P69 Energy policy Review of Carbon Price Tariff including tiered approach and £300 per carbon ton option
Summer 2021	Preparation of evidence base for 2030 and modelling of forecast emissions based on the policy
Autumn 2021	Consultation and engagement with community groups on P69 Energy policy
Autumn 2021	Consultation and engagement with community groups on the policy
2022	Early review of the NSP as a whole from Climate Emergency perspective
2022	Early review policy adoption
Ongoing workstream	DHN connection exploration in Southwark

Disclaimer

98. The evidence paper is proportionate to the requirements but is not and cannot be exhaustive in its analysis. It is expressly recognised that some assumptions will require refinement as further evidence emerges. This is particularly true with regards to Climate Change where the Science and Policy responses are developing at a fast pace. Publicly available evidence is referenced for independent examination by any reader of this document enabling verification and informed debate of emerging interpretations of data and documentation.
99. The initial paper focuses on energy use within the operation of building stock, for reasons discussed in this report. It excludes carbon associated with manufactured goods (including those that are used in the construction of buildings). This does not preclude the addition of such analysis in later documents.
100. The authors and commissioning team continue to welcome commentary and feedback as part of an open and constructive 'critical review' of the information presented so that this may improve this document and future reviews.

Appendix 1

The table below sets out which policies in the emerging development plan for Southwark (the London Plan [2021], the New Southwark Plan and the South Bank and Waterloo Neighbourhood Plan) address climate change adaptation and mitigation having regard to the 'Climate change' section of Planning Practice Guidance.

How can the challenges of climate change be addressed through the Local Plan?

(NPPG Paragraph 003 Reference ID: 6-003-20140612)

Guidance	London Plan (2021)	New Southwark Plan	Southbank and Waterloo Neighbourhood Plan
Mitigating against climate change by reducing emissions			
Reducing the need to travel and providing for sustainable transport	T1 Strategic approach to transport T2 Healthy Streets T3 Transport capacity, connectivity and safeguarding T4 Assessing and mitigating transport impacts T5 Cycling T6 Car parking T7 Deliveries, servicing and construction T9 Funding transport infrastructure through planning SI6 Digital connectivity infrastructure SI14 Waterways – strategic role SI15 Water transport SI16 Waterways – use and enjoyment SI17 Protecting and enhancing London’s waterways SI8 Waste capacity and net waste self sufficiency SI9 Safeguarded waste sites	P44 Healthy developments P48 Public transport P50 Walking P51 Low line routes P52 Cycling P53 Car Parking P56 Open Space P58 Green Infrastructure P59 Biodiversity P60 Trees	P5 Air Quality a) i) – incorporating car parking with car free developments and electric vehicle charging points) and b), c) and d). o Appendix 10 (Greenways: walking routes through the neighbourhood area)

Providing opportunities for renewable and low carbon energy technologies	SI2 Minimising greenhouse gas emissions SI3 Energy infrastructure SI5 Water infrastructure	P69 Energy IP3 Community Infrastructure levy (CIL) and Section 106 planning obligations <u>Evidence Base</u> Energy Background Paper	N/A
Providing opportunities for decentralised energy and heating	SI3 Energy infrastructure SI4 Managing heat risk	P69 Energy <u>Evidence Base</u> EIP61 Old Kent Road Decentralised Energy Study	N/A
Promoting low carbon design approaches to reduce energy consumption in buildings, such as passive solar design	D6 Housing quality and standards SI1 Improving air quality SI2 (Minimising greenhouse gas emissions SI4 Managing heat risk SI7 Reducing waste and supporting the circular economy SI8 Waste capacity and net waste self sufficiency	P12 Design of places P13 Design quality P14 Residential design P68 Sustainability Standards P69 Energy	P3 (a – flat and planting roof; b - alternative climate change mitigation approaches) o P4 (e – impact of development on trees) o P13 iii) (physical improvements including refuse storage)
Adapting to a changing climate			
Considering future climate risks when allocating development sites to ensure risks are understood over the development's lifetime	D1 London's form, character and capacity for growth D3 Optimising site capacity through the design-led approach	P12 Design of places P13 Design quality P14 Residential design P68 Sustainability Standards	N/A
Considering the impact of and promoting design responses to flood risk and coastal change for the lifetime of the development	SI5 Water infrastructure SI12 Flood risk management SI13 Sustainable drainage SI17 Protecting and enhancing London's waterways	P12 Design of places P67 Reducing flood risk	N/A

<p>Considering availability of water and water infrastructure for the lifetime of the development and design responses to promote water efficiency and protect water quality</p>	<p>S15 Water infrastructure SI13 Sustainable drainage</p>	<p>P66 Reducing water use</p>	<p>N/A</p>
<p>Promoting adaptation approaches in design policies for developments and the public realm</p>	<p>D1 London’s form, character and capacity for growth D3 Optimising site capacity through the design-led approach D8 Public realm D11 Safety, security and resilience to emergency G1 Green infrastructure G3 Metropolitan Open Land G4 Open space G5 Urban greening G6 Biodiversity and access to nature G7 Trees and woodlands G8 Food growing SI4 Managing heat risk SI5 Water infrastructure SI12 Flood risk management SI13 Sustainable drainage SI17 Protecting and enhancing London’s waterways</p>	<p>P12 Design of Places P13 Design quality P58 Green Infrastructure P59 Biodiversity P60 Trees SP6 Cleaner, greener, safer SP2 Regeneration for all</p>	<p>P1 Open space P3 a) roof planting)P4 c) and e) P5 (Air Quality) a) iii) implementation of green infrastructure P6 the utilisation of vacant development sites for temporary activity P13 iii) and vi) (physical improvements including refuse storage and green infrastructure) Appendix 9 (Developer guidelines for The Implementation of green infrastructure)</p>

<p>Engaging with appropriate partners, including utility providers, communities, health authorities, regulators and emergency planners, statutory environmentalbodies, Local</p>	<p>The Draft London Plan underwent an extensive public consultation and engagement process. See Draft London Plan Examination in Public Library Website. The Mayor signed off the Publication London Plan in December2020.</p>	<p>IP1 Infrastructure IP2 Transport Infrastructure P62 Land for waste management See Duty to Co-operate Statement See Statement of Common Grounds</p>	<p>Appendix 8 (Listening Phase Consultation Report)</p>
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How can adaptation and mitigation approaches be integrated?

(NPPG Paragraph 004 Reference ID: 6-004-20140612)

Guidance	London Plan (2021)	New Southwark Plan	Southbank and Waterloo Neighbourhood Plan
by maximising summer cooling through natural ventilation in buildings and avoiding solar gain through district heating networks that include tri-generation (combined cooling, heat and power)	D3 Optimising site capacity through the design-led approach B1 D6 Housing quality and standards C /D D9 Tall buildings C3a S14 Managing heat risk S13 Energy infrastructure	P16 Tall Buildings P68 Sustainability Standards P69 Energy <u>Evidence Base</u> EIP61 Old Kent Road Decentralised Energy Study	N/A
through the provision of multi-functional green infrastructure, which can reduce urban heat islands, manage flooding and help species adapt to climate change – as well as contributing to a pleasant environment which encourages people to walk and cycle	D8 Public realm I G1 Green infrastructure G3 Metropolitan Open Land Paragraph 2.114 G4 Open space G5 Urban greening G6 Biodiversity and access to nature G7 Trees and woodlands G8 Food growing S14 Managing heat risk S110 Aggregates D1 S112 Flood risk management S113 Sustainable drainage S117 Protecting and enhancing London’s waterways	P56 Open Space P58 Green Infrastructure P59 Biodiversity P60 Trees SP6 Cleaner, greener, safer <u>Evidence Base</u> SP602 - Southwark Open Space Strategy (2013) SP602A - Southwark open Space Strategy Evidence Report (2013) SP603 - Southwark Playing Pitch Strategy (2016) SP603A - Southwark Playing Pitch Strategy: Appendix A - H SP604 - Southwark Sites of Interest for Nature Conservation	P1 (Open space) P3 a) (roof planting) P4 c) and e) 31 which can reduce urban heat islands, manage flooding and help species adapt to climate change – as well as contributing to a pleasant environment which encourages people to walk and cycle

		<p>Review (2016) SP604A - Southwark Sites of Interest for Nature Conservation Review: Appendix 1 SP605 - Southwark Biodiversity Action Plan 2013 – 2019 Southwark Nature Action Plan 2020</p>	<p>P5 (Air Quality) a) iii) implementation of green infrastructure P6 (the utilisation of vacant development sites for temporary activity such as sport pitches and food growing) P13 vi) (physical improvements including green infrastructure) Appendix 9 (Developer guidelines for the implementation of green infrastructure)</p>
<p>Local planning authorities should be aware of and avoid the risk of maladaptation (adaptation that could become more harmful than helpful). For example, designing buildings to maximise solar gain in winter without thinking through the implications for overheating in summer.</p>	<p>See Draft London Plan Examination in Public Library Documents</p>	<p>P13 Design Quality P16 Tall Buildings P68 Sustainability Standards</p> <p><u>Evidence base</u> EIP54 Tall Buildings Background Paper</p>	<p>N/A</p>

<p>Sustainability appraisal and, where required, Environmental Impact Assessment, can be useful for testing the integration of mitigation and adaptation measures and the long term implications of decisions.</p>	<p>See Draft London Plan Examination in Public Library Documents</p>	<p><u>Evidence Base</u> Integrated Impact Assessment EIP72 and Integrated Impact Assessment EIP72A</p>	<p>N/A</p>
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How can planning deal with the uncertainty of climate risks when promoting adaptation in particular developments?

Paragraph: 005 Reference ID: 6-005-20140306

Guidance	London Plan (2021)	New Southwark Plan	Southbank and Waterloo Neighbourhood Plan
<p>identifying no or low cost responses to climate risks that also deliver other benefits, such as green infrastructure that improves adaptation, biodiversity and amenity</p>	<p>D8 Public realm I G1 Green infrastructure G3 Metropolitan Open Land G4 Open space G5 Urban greening G6 Biodiversity and access to nature G7 Trees and woodlands G8 Food growing S14 Managing heat risk S110 Aggregates D1 S112 Flood risk management G S113 Sustainable Drainage B3 S117 Protecting and enhancing London’s waterways</p>	<p>P55 Protection of Amenity P56 Open Space P58 Green Infrastructure P59 Biodiversity P60 Trees</p> <p><u>Evidence Base</u> SP602 - Southwark Open Space Strategy (2013) SP602A - Southwark open Space Strategy Evidence Report (2013) SP603 - Southwark Playing Pitch Strategy (2016) SP603A - Southwark Playing Pitch Strategy: Appendix A - H SP604 - Southwark Sites of Interest for Nature Conservation Review (2016) SP604A - Southwark Sites of Interest for Nature Conservation Review: Appendix 1 SP605 - Southwark Biodiversity Action Plan 2013 – 2019</p>	<p>P1 (Open space) P3 a) (roof planting) P4 c) and e) P5 (Air Quality) a) iii) implementation of green infrastructure P6 (the utilisation of vacant development sites for temporary activity such as sport pitches and food growing) P13 vi) (physical improvements including green infrastructure) Appendix 9 Developer access to open space and the creation of new open space and green infrastructure</p>

<p>building in flexibility to allow future adaptation if it is needed, such as setting back new development from rivers so that it does not make it harder to improve flood defences in future</p>	<p>SI12 (Flood risk management)</p>	<p>P57 Open water space P67 Reducing flood risk</p> <p><u>Evidence base</u> <u>EIP15A - Strategic Flood Risk Assessment (SFRA) Level I</u> EIP15B - Strategic Flood Risk Assessment (SFRA) Level I: technical summary EIP15C - Strategic Flood Risk Assessment (SFRA) Level I: Appendices A-I EIP15D - Strategic Flood Risk Assessment (SFRA) Level II: Sequential test of site allocations</p>	<p>N/A</p>
<p>the potential vulnerability of a development to climate change risk over its whole lifetime</p>	<p>SI4 Managing heat risk SI5 Water infrastructure SI12 Flood risk management SI13 Sustainable drainage In addition, the Publication London Plan (2020) G policies (G1, G3, G5, G8) on green infrastructure and natural environment will result in addressing climate change risk over the development whole lifetime.</p>	<p>P56 Open Space P58 Green Infrastructure P59 Biodiversity P60 Trees</p> <p><u>Evidence base</u> SP605 - Southwark Biodiversity Action Plan 2013 – 2019</p>	<p>P1 (Open space) P3 a) (roof planting) P4 c) and e) P5 (Air Quality) a) iii) implementation of green infrastructure P6 (the utilisation of vacant development sites for temporary activity such as sport pitches and food growing) P13 vi) (physical improvements including green infrastructure) Appendix 9 (Developer guidelines for the</p>

			implementation of green infrastructure)
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What evidence of risks arising from climate change is available to support local plan-making?

Paragraph: 006 Reference ID: 6-006-20140306

Guidance	London Plan (2021)	New Southwark Plan	Southbank and Waterloo Neighbourhood Plan
<p>Climate change risk assessments can support the production of Local Plans by informing the Sustainability appraisal.</p>	<p>See Draft London Plan Examination in Public Library Documents, including: Green Infrastructure Sustainable Infrastructure Transport Topic Papers on Energy London Heat Map</p>	<p><u>Evidence Base</u> Integrated Impact Assessment EIP72 and Integrated Impact Assessment EIP72A</p>	<p>Key issues section of each 7 key themes Appendix 1 – 7 (Summary of results of consultation and evidence for each key themes and Area data)</p>
<p>Local risk assessments can be used to identify those climate risks, including those arising from severe weather events, the planning system can address. Risk assessments could consider the implications for the built environment and development, infrastructure, services and biodiversity, and their subsequent implications for vulnerable groups and community cohesion. Identifying those impacts which pose most potential risk or disruption to the provision of local services will enable vulnerability to be assessed and areas suitable for development to be identified and adaptation responses to be put in place.</p>	<p>See Draft London Plan Examination in Public Library Documents</p>	<p>Southwark Nature Action Plan 2020 Southwark Annual Public Health Report 'Our Climate, Our Health' 2019</p>	<p>Appendix 1 (Summary of results of consultation and evidence for 'Green infrastructure, open space and air quality' theme, including Air Quality Map) o Appendix 7 (Area data), including data on health</p>

<p>Other parts of a Local Plan’s evidence base will also include information on climate change risks, such as the Strategic Flood Risk Assessment and Water Resource Management Plan and water cycle studies. Infrastructure providers hold information on the extent of supply and network constraints and their existing plans to reinforce those networks and capacity. Other service providers may also have carried out risk assessments that have implications for planning, such as health and social service providers.</p>	<p>See Draft London Plan Examination in Public Library Documents</p>	<p><u>Southwark Evidence Base</u> SP602 - Southwark Open Space Strategy (2013) SP602A - Southwark open Space Strategy Evidence Report (2013) SP603 - Southwark Playing Pitch Strategy (2016) SP603A - Southwark Playing Pitch Strategy: Appendix A - H SP604 - Southwark Sites of Interest for Nature Conservation Review (2016) SP604A - Southwark Sites of Interest for Nature Conservation Review: Appendix 1 - 4 SP605 - Southwark Biodiversity Action Plan 2013 – 2019 EIP15A - Strategic Flood Risk Assessment (SFRA) Level I EIP15B - Strategic Flood Risk Assessment (SFRA) Level I: technical summary EIP15C - Strategic Flood Risk Assessment (SFRA) Level I: Appendices A-I EIP15D - Strategic Flood Risk Assessment (SFRA) Level II: Sequential test of site allocations</p>	<p>N/A</p>
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<p>Local studies can also be undertaken to provide a more detailed assessment of local vulnerability to climate impacts and the effects of extreme weather events.</p>	<p>See Draft London Plan Examination in Public Library Documents</p>	<p><u>Environment (including air quality and waste):</u> EIP62 Joint strategic technical waste management paper (2020) <u>SP607 - Air Quality Strategy and Action Plan (2017)</u> <u>Transport</u> Movement Plan 2019 Social Equity Framework for the Movement Plan <u>Socio-economic data</u> Southwark's Health Profile and Joint Strategic Needs Assessment (JSNA) Integrated Impact Assessment IIA baseline data</p>	<p>Green infrastructure, open space and air quality: Appendix 1 (Summary of results of consultation and evidence for 'Green infrastructure, open space and air quality' theme) including Air Quality Map - a system developed by King's College London's Air Quality Unit.</p>
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How can local planning authorities identify appropriate mitigation measures in plan-making?
Paragraph: 007 Reference ID: 6-007-20140306

Guidance	London Plan (2021)	New Southwark Plan	Southbank and Waterloo Neighbourhood Plan
Every area will have different challenges and opportunities for reducing carbon emissions from new development such as homes, businesses, energy, transport and agricultural related development.	See Examination in Public Library Mayor Documents, including: Green Infrastructure Sustainable Infrastructure Transport Topic Papers on Energy London Heat Map	Integrated Impact Assessment (EIP72 and EIP72A)	Key issues section of each 7 key themes Appendix 1 – 7 (Summary of results of consultation and evidence for each key themes and Area data)
Robust evaluation of future emissions will require consideration of different emission sources, likely trends taking into account requirements set in national legislation, and a range of development scenarios.	See Examination Library Mayor’s Documents, including: Topic Papers on Energy	Energy Background paper and Energy Background Paper Addendum	N/A
Information on carbon emissions at local authority level has been published by the government for 2005 onwards, and can be drawn on to inform emission reduction options. Information is also available on GOV.UK on how emissions are reported against the national target to reduce the UK’s greenhouse gas emissions by at least 80% (from the 1990 baseline) by 2050.	See Examination in Public Library Mayor Documents, including: Topic Papers on Energy Whole life Cycle Carbon Assessments, Circular Economy Statements and Be Seen Energy Monitoring PPG guidance	Energy Background paper and Energy Background Paper Addendum <u>Monitoring Indicators</u> LEGGI data for carbon emissions baseline Energy consumption by sector (Domestic and Industry/commerce) Domestic consumption per capita of natural gas Domestic consumption per capita of electricity Total carbon emissions in the borough	N/A

		Number of households experiencing fuel poverty	
The distribution and design of new development and the potential for servicing sites through sustainable transport solutions, are particularly important considerations that affect transport emissions. Sustainability appraisal should be used to test different spatial options in plans on emissions.	See Examination in Public Library Mayor Documents, including: Transport	Movement Plan (2019) Sustainable modes of transport strategy (2009-2015) Cycling Strategy (2015) Technical guidance for construction (Southwark) Draft Kerbside Strategy	Appendix 9 (Developer guidelines for the implementation of green infrastructure) Appendix 10 (Greenways: walking routes through the neighbourhood area)
Different sectors may have different options for mitigation. For example, measures for reducing emissions in agricultural related development include anaerobic digestion, improved slurry and manure storage and improvements to buildings. In more energy intensive sectors, energy efficiency and generation of renewable energy can make a significant contribution to emissions reduction.	See Examination in Public Library Mayor Documents	<u>Environment (including air quality and waste):</u> EIP62 Joint strategic technical waste management paper (2020) <u>SP607 - Air Quality Strategy and Action Plan (2017)</u> <u>Transport</u> Movement Plan 2019 Social Equity Framework for the Movement Plan <u>Socio-economic data</u> Southwark's Health Profile and Joint Strategic Needs Assessment (JSNA) Integrated Impact Assessment IIA baseline data	Key issues section of each 7 key themes Appendix 1 – 7 (Summary of results of consultation and evidence for each key themes and Area data)

How can local planning authorities support energy efficiency improvements to existing buildings?
008 Reference ID: 6-008-20140306

Guidance	London Plan (2021)	New Southwark Plan	Southbank and Waterloo Neighbourhood Plan
Where energy efficiency improvements require planning permission local planning authorities should ensure any advice to developers is co-ordinated to ensure consistency between energy, design and heritage matters.	SI2 Minimising greenhouse gas emissions D6 Housing quality and standards C and D	P12 Design of places P13 Design quality P14 Residential Design P18 Listed buildings and structures P19 Conservation areas P68 Sustainability Standards P69 Energy	N/A