Chapter 12: Climate Change and Greenhouse Gases

TRIUM

CLIMATE CHANGE AND GREENHOUSE GASES	
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SUPPORTING APPENDIX	**ES Volume 3, Appendix: Climate Change and Greenhouse Gases** Annex 1: GHG Policy and Legislation; Annex 2: Extract from Whole Life Carbon Assessment; Annex 3: Extract from Energy Strategy; Annex 4: Professional Experience; and Annex 5: Climate Change Technical Note.
KEY CONSIDERATIONS	**PART A** by Trium Environmental Consulting LLP This Environmental Statement (ES) chapter addresses climate change resilience and adaptation. A future climate scenario has been developed through the use of the future climate projections published by the Met Office (through the UK Climate Projections (UKCP18) website). The results include projections for variables including annual mean temperatures, and annual changes in summer and winter precipitation. To describe the predicted future climate, a medium emissions scenario (RCP8.5) for 2080 has been utilised as the future baseline. RCP8.5 has been used as it represents the most reasonable emissions scenario with regards to climate policy, land use, and technological development. The year 2080 is the timeframe considered most relevant to the Proposed Development. The projected change to the range of climatic conditions will adopt the 50% probability level, which is a central estimate adopted given the level of uncertainty associated with predicting the modelled scenarios. The future climate change scenario has been considered for each of the technical topics presented in this ES ('In-Combination Climate Change Impacts'), and the level of assessment and methodology is proportional to the available evidence base. The aim of the assessment has been to consider whether the effect on receptors (under the current condition, without climate change) are likely to be different under an alternative future climate regime; in particular, to identify whether the potential impacts of the Proposed Development will be worse or improve under the future baseline, and therefore if these changes alter the significance of effects identified for the Proposed Development under the current condition (without climate change). This is the potential for climate change to affect the Proposed Development. This section also includes an overview of the climate change resilience and adaptation measures that have been factored into the design of the Proposed Development. **PART B** by Air Quality Consultants Ltd The Proposed Development will lead to the direct and indirect release of greenhouse gases (GHG), both during the deconstruction and construction stage, and throughout the lifetime of the Proposed Development. This assessment estimates the GHG emissions associated with the Proposed Development taking a lifecycle approach and presents the mitigation measures and specific design measures provided by the scheme to minimise its GHG footprint. This is the effect of the Proposed Development on climate change.
CONSULTATION	An EIA Scoping Opinion Request Report ('EIA Scoping Report') was submitted to the London Borough of Camden (LBC) on 4 August 2023 (refer to **ES Volume 3, Appendix: EIA Methodology – Annex 1**) which sets out the proposed scope and method proposed for this ES chapter. A draft of the 'EIA Scoping Report Review' (prepared by CBRE, the LBC's appointed EIA advisors) was issued on 4 October 2023 (refer to **ES Volume 3, Appendix: EIA Methodology - Annex 2**), and a final EIA Scoping Opinion was subsequently issued on the 16 November 2023. The EIA Scoping Opinion agrees with the proposed scope and methodology of the climate change and GHG ES chapter. This ES chapter has been produced in line with the EIA Scoping Opinion comments, including clarity on the baseline position and the length of vacancy.

PART A CLIMATE CHANGE RESILIENCE AND ADAPTATION

12.1 The approach to assessing the potential impact of climate change on the Proposed Development has been undertaken in accordance with the Institute of Environmental Management and Assessment's (IEMA's) guidance '*Climate Change Resilience and Adaption*'[1], which presents a framework for the consideration of climate change resilience and adaption in the EIA process. It recognises a need for a proportionate approach to the assessment, due to the uncertainties associated with predicting how the environment will respond to climate change.

12.2 The guidance advises on inter alia, defining the future climate scenario, the integration of climate change adaption into the design, and the process for EIA. The guidance also provides advice on the execution of the impact assessment across the technical topics, including the identification of the climate related parameters which are likely to influence the project in question, and the anticipated changes to those parameters under a future climate scenario.

12.3 Consistent with the guidance, a future climate scenario has been developed through the use of the future climate projections published by the Met Office (through the UK Climate Projections (UKCP18) website[2]). The results include projections for variables including annual mean temperatures, and annual changes in summer and winter precipitation – refer to **ES Volume 3, Appendix: Climate Change – Annex 5**.

12.4 To describe the predicted future climate, a high emissions scenario (RCP8.5) for 2080 has been utilised as the future baseline. RCP8.5 has been used as it represents a conservative high emissions scenario. The year 2080 is the timeframe considered most relevant to the Proposed Development, this is relevant as an estimated operational lifetime of 60 years has been assumed, this is a typical assumption in accordance with British Standard EN 15978:2011[3]. The projected change to the range of climatic conditions has adopted the 50% probability level, which is a central estimate adopted given the level of uncertainty associated with predicting the modelled scenarios. This approach is in accordance with the IEMA Climate Change Resilience and Adaptation guidance, which states that "*Recommended best practice is to use the higher emissions scenario (RCP 8.5 in the latest UKCP18 projections) at the 50th percentile, for the 2080s timelines, unless a substantiated case can be made for not doing this (e.g. anticipated lifespan of the project is shorter than 2080s)*".

12.5 The future climate change scenario has been considered by each of the technical topics covered within this ES ('In-Combination Climate Change Impacts'), and the level of assessment and methodology is proportional to the available evidence base. The aim of the assessment has been to consider whether the effect on receptors (under the current condition, without climate change) are likely to be different under an alternative future climate regime; in particular, to identify whether the potential impacts of the Proposed Development will be worse or improve under the future baseline, and therefore if these changes alter the significance of effects identified for the Proposed Development under the current condition (without climate change). A key aspect of the assessment (for each of the technical topics considered) has been to identify the likely effect of those receptors considered more vulnerable to changes in climate, having taken into account the resilience and adaptive measures (being either design or management) which are proposed for the scheme in order to mitigate the risk presented by climate change.

12.6 Due to the level of uncertainty in both the future climate projections and how the future climate conditions may affect sensitive receptors, the assessment is qualitative (determining whether or not there is the risk of significant effects as a result of climate change impacts on/in conjunction with the Proposed Development), based on objective professional judgement, unless where there is published, accepted quantifiable methods available (i.e., in relation to the assessment of flood risk).

12.7 The final section of Part A presents the adaption and resilience measures proposed as part of the Proposed Development, in response to the projected future climate change scenario (as described below).

Historic and Existing Climate Conditions

12.8 The most recent State of the UK Climate Report[4] reviews current climate conditions against historic trends, summarised as follows:

- In comparison to the 20th century, recent decades have been warmer, wetter and sunnier;
- 2022 was the warmest year in the UK since 1884, 0.9°C above the 1991-2020 average;
- The most recent decade (2013-2022) was 0.3°C warmer than the 1991-2020 average and 1.1°C warmer than the 1961-1990 average;
- In 2022 the UK had its driest summer since 1995;
- The most recent decade (2013-2022) has been on average as wet as 1991-2020 and 8% wetter than 1961-1990 for the UK;
- UK Winters for the most recent decade (2013-2022) have been 10% wetter than those in 1991-2020 and 25% wetter than in 1961-1990; and

[1] *IEMA (2020). Climate Change Resilience and Adaption*
[2] *https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/download-data*
[3] *British Standard BSEN 15978:2011. Sustainability of construction works. Assessment of environmental performance of buildings. Calculation method.*
[4] *International Journal of Climatology (2022), State of the UK Climate 2022.*

- The number and severity of substantial snowfall events have generally declined since the 1960s.

Future Climate Change Scenario

12.9 The 2022 UKCP Headline Findings[5] highlights the key climate projections for the UK as follows:

- By the end of the 21st century, all areas of the UK are projected to be warmer, more so in summer than in winter;
- Hot summers are expected to become more common. The temperature of hot summer days, by the 2070s, show increases of 3.8°C to 6.8°C, under a high emissions scenario, along with an increase in the frequency of hot spells;
- Rainfall patterns across the UK are not uniform and vary on seasonal and regional scales and will continue to vary in the future;
- Significant increases in hourly precipitation extremes in the future;
- Despite overall summer drying trends in the future, future increases in the intensity of heavy summer rainfall events are likely;
- Future climate change is projected to bring about a change in the seasonality of extremes; and
- Sea levels rising.

12.10 The future climate of London is predicted to undergo significant change over the duration of the Proposed Development. Recent historical and current events such as the hot, dry summers of 2022 provide a demonstration of the conditions that are likely to become more frequent.

12.11 Annual Mean air temperature in London is predicted to rise by 1.04ºC during 2020-2039, and during the period of construction of the Proposed Development with Phase 2 scheduled for completion by 2036. This rises to 1.87ºC between 2040-2059, and 2.96ºC between 2060-2079, during much of the anticipated life span of the Proposed Development.

12.12 Rainfall in London is predicted to decrease by 8.66% during summer and rise by 7.35% in winter between 2020-2039; decrease by 19.99% during summer and rise by 11.42% during winter between 2040-2059; and drop by 29.04% during summer and rise by 17.90% in winter between 2060-2079. In addition, annual precipitation is predicted to decrease by -1.92% by 2079.

12.13 Further detail on the future climate change scenario that has been considered in this assessment based on the climate projections published by the Met Office (through the UK Climate Projections (UKCP18) website) is provided in **ES Volume 3, Appendix: Climate Change – Annex 5**.

In-Combination Climate Change Impacts

Socio-Economics

12.14 Considering the 2080 future baseline for climatic conditions, it has been concluded that climate change would have little effect on the future socio-economic baseline. It is expected that the health of the general population may be adversely affected by increased risk of overheating and other heat-related illnesses, drought, and decreased water and food security. However, this is partially offset against a reduced risk of cold-weather related illness in the winter, particularly in vulnerable groups such as the elderly.

12.15 The Proposed Development has been designed to minimise the exposure of future workers and visitors to health-related issues which could be accentuated by climate change. Therefore, whilst the baseline sensitivity might rise slightly at a general population level, it is not envisaged that the specific impact of the Proposed Development and its population would be adversely affected. Therefore, potential effects related to climate change are not expected to alter the assessment of socio-economic effects (**ES Volume 1, Chapter 6: Socio-Economics**).

Traffic and Transport

12.16 Climate change variables, such as air temperature, precipitation, wind and total cloud cover, would not have a direct effect on the transport effects considered in the Traffic and Transport assessment (severance, pedestrian and cycle amenity, collisions and safety, fear and intimidation, delay for drivers, pedestrians and cyclists and public transport) and as such the effect of the Proposed Development in transport terms would not change under the future climate change scenario.

12.17 However, people travelling to and from the Proposed Development, especially those by active modes (walking and cycling), would be sensitive to climate change. Table 12.1 provides a summary of receptor sensitivity and vulnerability for the assessment.

Table 12.1 Summary of Receptor Sensitivity and Vulnerability for Assessment

Receptor	Sensitivity	Vulnerability
Highway links/Pedestrians/Cyclists/ Public transport users	Medium	Medium – climatic factors have some influence on receptors travelling to and from the Proposed Development by active modes (walking and cycling)

12.18 The range of proposed mitigation measures designed to reduce the impact of the Proposed Development on the effects assessed under Traffic and Transport would also mitigate the potential effects of climate change in the future.

12.19 The Delivery and Servicing Plan (DSP) has been prepared to reduce and manage the number of deliveries to the site and a Travel Plan to encourage employees and visitors to travel to the site by sustainable modes of transport. The DSP will seek to minimise the impacts of all delivery and servicing activity associated with the complete and operational Proposed Development. he Travel Plan would also raise awareness of the benefits of travelling by non-car modes on the environment and climate change. In addition, the Proposed Development would provide the following improvements for travel by active modes:

- Pedestrian/cycle access links within the site improve connectivity in the area;
- Cycle parking, shower and locker facilities; and
- Footway improvements on Euston Road and Hampstead Road.

12.20 In addition, The Low Emission Zone (LEZ), which covers most of Greater London, and the recently extended Ultra Low Emission Zone (ULEZ) aim to encourage the most polluting heavy diesel vehicles driving in London to become cleaner.

12.21 With electric vehicles increasing in popularity and smarter travel options, it is not anticipated that the effects of the Proposed Development would alter the future climate scenario in the future.

12.22 Therefore, potential effects related to climate change are not expected to alter the assessment of traffic and transport effects (**ES Volume 1, Chapter 7: Traffic and Transport**).

Air Quality

12.23 In relation to air quality related impacts, the future climate baseline condition (based on the sources identified in the '*Future Climate Change Scenario'* above is likely to result in:

- Surface ozone increasing due to higher temperatures, allowing more NOx to convert NO_2, which is harmful to human health and may thus worsen local air quality;
- Increased temperatures may lead to a greater demand for air conditioning of buildings which would increase electrical demand and thus may result in increased indirect pollutant emissions via the National Grid;
- During summer periods, warmer temperatures will cause soils to become drier, which may result in increased dust and emissions of particulates from construction activities; and
- The combined effect of increased temperatures and reduced precipitation may encourage a behavioural change in transportation during summer, with potentially more users of the Proposed Development and

[5] *UKCP (August 2022), UK Climate Projections: Headline Findings.*

nearby properties walking and cycling. This may in turn lead to improved air quality in the local area, although the inverse is also possible with wetter winters users may use private modes of transport to a greater degree.

12.24 Air Quality is predicted to improve in the future, owing to lower emissions from road vehicles and heating and cooling plant as progressively lower emission technologies become available. The air quality assessment (**ES Volume 1, Chapter 8: Air Quality**), therefore, focuses on the near-term (year of opening), but the outlook for the longer term is one of improvement, both in terms of local and regional air quality, but also in terms of emissions associated with the Proposed Development itself as technological advances facilitate a shift towards lower-emitting sources. Climate change is a long-term effect, and significant changes in climate are not expected by 2030 (the earliest year of occupation of the Proposed Development), however in the longer-term (2050 – 2080) changes in climate might affect the need for heating and cooling and, therefore, may influence the regional emissions. Overall effect of climate change on the air quality effects described in **ES Volume 1, Chapter 8: Air Quality** will be not significant.

Noise and Vibration

12.25 The future climate baseline of 2080 shows an increase in air temperatures during summer months and cooler temperatures during the winter. Increased temperatures during the warmer months have the potential to result in noise sensitive receptors increasingly relying upon natural ventilation (such as openable windows) for the control of overheating. Whilst the Proposed Development does not rely on openable windows, the façade includes natural ventilation measures to facilitate air flow.

12.26 The noise climate in and around the site is predominately dominated by road traffic noise, however for this to be noticeably higher future road journeys would be required to increase significantly (i.e. more than double). Given the existing high levels of traffic, combined with the drive to encourage more sustainable travel modes such as walking, cycling and use of public transport, external noise levels are unlikely to rise to be perceptible.

12.27 There is also the potential for heating and cooling systems to operate at higher duty levels, however, increases in noise are expected to be modest and the magnitudes of impacts unchanged.

12.28 Overall, it is considered that the magnitudes of impact will remain unchanged under future climate conditions. Therefore, the effects identified within the noise and vibration assessment (**ES Volume 1, Chapter 9: Noise and Vibration**) will remain unchanged.

Daylight, Sunlight, Overshadowing and Solar Glare

Daylight

12.29 Following the guidance published by the BRE, daylight assessments are carried out under an assumed overcast sky.

12.30 The methodologies used to quantify the levels of daylight are the Vertical Sky Component (VSC) or No Sky Line (NSL). Of these, none are explicit measurements of light but rather the VSC is expressed as percentages of the total amount of light received at an unobstructed location. The NSL by contrast is a percentage of the room that can see the sky.

12.31 Being percentages, the daylight assessments above do not depend on the absolute amount of daylight outside and, since they also assume an overcast sky, they are independent of the cloud coverage or the annual number of sunlight hours.

12.32 By following the current BRE Guidelines methodology, therefore, the numeric daylight results are not affected by changes in climate.

12.33 Climate change projections (**ES Volume 3, Appendix: Climate Change Annex 5**) suggest that the average cloud coverage could be slightly reduced, although no information is provided on how this would affect global and diffuse illuminance and irradiance levels. Whilst the relationship between cloud cover and daylight illuminance is not defined as part of the projections, it is probably reasonable to assume as cloud coverage is reduced, the overall amount of usable daylight increases. However, this would not impact the conclusions within this report which are based on numeric daylight assessments.

12.34 Therefore, the current BRE Guidelines criteria and the results of the associated daylight assessments are not influenced by, nor would they be altered by the 2080 future climate scenario.

Sunlight

12.35 To quantify the amount of sunlight that a residential window can be expected to receive throughout the years, Annual Probable Sunlight Hours (APSH) are used. This is a set of 100 fixed locations in the sky representing possible sun positions throughout the year.

12.36 The point locations were published by BRE Guidelines and are based on hourly sunlight availability. A change in climate that might result in more annual sunlight hours (currently 1,481 in London) would not result in more than 100 APSH test points, since this is a fixed number.

12.37 If, in a future revision of the daylighting guide, BRE Guidelines were to keep the current methodology but update the set of 100 reference points to reflect a slightly sunnier climate, it can be expected that the locations of the points on the sky dome may shift, whilst their overall number remain the same.

12.38 Therefore, an APSH assessment following the current methodology but relying on a (hypothetical) updated set of test points likely produce comparable but not necessarily identical results.

12.39 The future climate in the UK is likely to be somewhat sunnier; however, unless the BRE Guidelines methodology is changed, this would not be reflected in an APSH assessment.

12.40 Therefore, the current BRE Guidelines criteria and the results of the associated sunlight assessments are not influenced by, nor would they be altered by, climate change.

Overshadowing

12.41 Overshadowing assessments are undertaken on any day of the year although the equinox is most common.

12.42 The assessment assumes a day with no cloud cover and so the maximum potential sunlight is assessed. From the climate projections, the future climate in the UK is likely to be somewhat sunnier but unless the methodology is changed, this would not be reflected in an overshadowing assessment.

12.43 Therefore, the current BRE Guidelines criteria and the results of the associated overshadowing assessments are not influenced by, nor would they be altered by, climate change.

Solar Glare

12.44 The solar glare assessment assumes that there is no cloud cover and so the maximum potential sunlight is assessed. On the basis of the assessment methodology applied, changes in the climate would not affect the outcome of the solar glare assessment.

Wind Microclimate

12.45 The 'Climate Projects Report' published by UKCP18 presented the probable changes in wind speeds for the 2070-2099 period (timeframe considered most relevant for urban regeneration projects) in both the summer and winter seasons (see Climate Change Technical Note presented within **ES Volume 3, Appendix: Climate Change – Annex 5**).

12.46 As set out within **ES Volume 3, Appendix: Climate Change – Annex 5**, the current trends in climate change are not likely to have significant effects on the predicted wind microclimate conditions in and around the Proposed Development. It is therefore not necessary to provide a quantitative analysis of the increase in storm frequency and its implication on the effect on the wind microclimate for the Proposed Development. The effects identified within the wind microclimate assessment (**ES Volume 1, Chapter 11: Wind Microclimate**) would remain unchanged under the 2080 future climate scenario.

Townscape, Heritage and Visual

(Built) Heritage

12.47 There are no climatic variables that would have a material impact on the assessment of built heritage considerations relevant to the Proposed Development, i.e. potential effects on heritage significance through change in part of their townscape settings. Accordingly, there would be no changes to the identified value/ importance of the relevant built heritage assets in terms of their particular heritage significance, or the sensitivity to change. There are not likely to be any changes to the identified magnitude of effects on the significance of

the relevant built heritage assets during the deconstruction and construction works or once the Proposed Development is complete and operational, having regard to future 2080 baseline that has been considered in consideration of the effects of climate change.

Townscape and Visual

12.48 Changes expected from the 2080 future climate scenario, such as increased rainfall levels and temperatures, are unlikely to impact on the appearance of the Proposed Development in views and its relationship to townscape character when the Proposed Development is completed. Townscape and visual receptors are considered to be of low vulnerability to climatic factors. Therefore, the effects as stated in **ES Volume 2, Townscape, Visual and Built Heritage Impact Assessment** will remain unchanged.

Adaptation and Resilience of the Proposed Development to Climate Change

12.49 The latest UK Climate Change Risk Assessment[6] identifies the key climate-related risk areas for action in the UK. The following have been identified as relevant to the Proposed Development:

- Risks to soil health from increased flooding and drought;
- Risks to people and the economy from climate-related failure of the power system; and
- Risks to human health, wellbeing, and productivity from increased exposure to heat in homes and other buildings.

12.50 Accordingly, and based on the future climate change scenario projections set out in **ES Volume 3, Appendix: Climate Change – Annex 5**, the main climatic factors that have influenced the evolution and design of the Proposed Development are temperature and precipitation. The design team have worked collaboratively to ensure climate change adaptation measures are incorporated into the design, which are discussed below.

Increase in Annual and Maximum Temperatures

Overheating of Buildings

12.51 In order to reduce overheating risk during periods of increased temperatures, the Energy Strategy for the Proposed Development has developed a mitigation strategy for managing heating and cooling, increasing the resilience to future climate change.

12.52 An energy efficient approach to the design has been employed in order to minimise internal heat generation. Energy efficient lighting (i.e. Light Emitting Diodes (LED)) with low heat output, insulation to heating and hot water pipework, and energy efficient equipment with low heat output to reduce unnecessary heat gain, are all methods that will be implemented to minimise internal heat generation.

12.53 As means of reducing the amount of heat entering the buildings within the Proposed Development during the summer months, the following methods have been considered and will be determined at the detailed design stage:

- A high-performance curtain wall façade has been specified to reduce space heating demand in winter and minimise the risk of summertime overheating;
- Optimised glazing percentages to maximise daylight penetration but minimising overheating. G-value limits specified for glazing elements aims to limit excessive solar gain on to the floor plate;
- Façade elements that project horizontally and vertically adjacent to glazing are optimised to provide solar shading during peak scenarios but also allows for beneficial solar gain during winter months;
- Mechanical systems will be designed to minimise unwanted heat generation such as those from pipework, fans and pumps through proper insulation and specification of high efficiency equipment. Lighting systems will be highly efficient LED systems, controlled to minimise lighting energy during daylight hours.

[6] *HM Government (2022), UK Climate Change Risk Assessment 2022*

12.54 Passive ventilation measures, openable, solid panels, are also proposed to be implemented in the Proposed Development, reducing the reliance on air conditioning to provide internal cooling, as described in the Ventilation Strategy submitted with the planning application. These panels will allow for additional natural ventilation to be supplied to perimeter zones of the floorplate. As there is still significant design development to undertake, no operational energy or carbon savings have been claimed from this addition.

Success of the Landscaping (and Biodiversity Benefits)

12.55 The increase in annual and maximum temperatures has the potential to damage soils (through periods of drought/drying out) and reduce the success of the proposed landscaping (and its biodiversity benefits). It is therefore critical to ensure that the landscape strategy is designed to be resilient to climate change, and that an adaptive management regime is implemented.

12.56 The soft landscaping strategy (which includes the implementation of four unique habitats, dense tree canopies and intensive green roofs) will reduce the amount of hardstanding within the Proposed Development, which will reduce the 'Urban Heat Island' effect and allow areas of shading and cooling during instances of hot weather.

12.57 Measures to improve resilience include incorporation of a diverse tree species cover, mixed species stands, careful selection of plant provenance, selection of species for their resistance to climate stress, and diverse planting structure, for example, drought tolerant species in the heathland habitat.

12.58 An appropriate maintenance strategy may involve naturalised planting management, wetland monitoring, habitat restocking and the planting of younger trees. A monitoring strategy might also be implemented to assess success of establishment and of current management, so that measures can be enacted to respond to changes.

12.59 These measures will mitigate the risk of failure of the landscaping and will assist in maintaining the biodiversity benefits of the Proposed Development.

12.60 In urban areas, intensifying climate change will result in increased rainfall intensity and risk of flash flooding in a largely impermeable environment, while increasing temperatures will exaggerate the urban heat island effect.

12.61 Not only will these proposals improve Urban Greening Factor (UGF) and biodiversity, but they are also adept at enhancing the climate resilience of the built environment, mitigating risks such as flooding and overheating, while providing a wider range of co-benefits.

Climate-Related Failure of the Power System

12.62 The Proposed Development is designed using an all-electric heating and cooling strategy that will be provided to the development by central heating and cooling plant consisting of air source heat pumps (ASHPs) and air-cooled to maximise the ability to share heat between spaces within the building. Simultaneous heating and cooling heat pumps can utilise free cooling to maximise efficiency through mid-seasons.

12.63 In addition, the installation of PV panels is included within the scheme to contribute to the reduction of the on-site carbon emissions. Approximately 100m^2 is planned to be included spread across appropriate areas at Level 31 roof level.

12.64 Space has also been provided for an emergency back-up generator for the tenants, but the specifications for this are not yet available.

Increase in Precipitation/ Intense Rainfall Events

Flood Risk

12.65 Within the landscape, the Proposed Development seeks to respond to climate change with maximising areas of soft landscaping (to reduce surface runoff) and incorporating Sustainable Urban Drainage Systems (SuDS) elements.

12.66 The impact of climate change on flood risk and water management have been considered, as required, as part of the preparation of the Flood Risk Assessment and Drainage Strategy. As identified within the Drainage Strategy, site surface water runoff will be reduced by at least 50% for the existing 1 in 100 year flood event which includes an allowance for a 40% increase due to climate change.

Part A Likely Significant Effects

12.67 In conclusion, under the future 2080 climate scenario, the residual effects of the Proposed Development would remain consistent with the effects identified as described throughout this ES and summarised in **ES Volume 1, Chapter 14: Likely Significant Effects** under the current climate conditions. It is considered by the design team that the adaptation and resilience measures set out above will address the future climate change scenario for the lifetime of the Proposed Development (2080) and no additional or different likely significant climate change adaptation/resilience related effects have been identified.

PART B: GREENHOUSE GAS EMISSIONS ASSESSMENT

Assessment Methodology

12.68 This section of this ES chapter provides a Greenhouse Gas (GHG) assessment for the Proposed Development. The Proposed Development includes the partial retention (retention of the existing building core, foundations and basement) disassembly, reuse and extension of the existing building to provide a 32-storey building for use as offices and research and development floorspace (Class E(g)) and office, retail, café and restaurant space (Class E) and learning and community space (Class F) at ground, first and second floors, and associated external terraces. A full description of the Proposed Development can be found in **ES Volume 1, Chapter 4: The Proposed Development.**

12.69 As set out in the Circular Economy Statement[7] special attention has been paid to the strategic retention of the existing building, and the reuse/recycling/upcycling of any materials from the deconstruction; it is proposed to retain 31% of the existing structure. The GHG assessment considers the emissions associated with the Proposed Development (i.e., a 31% retention of the existing structure). As such it should be noted, whilst the Proposed Development retention strategy has a positive effect to GHG emissions, these benefits have not been specifically calculated in this assessment. As such, the GHG assessment is conservative and in reality, an alternative scenario where the existing building is demolished is likely to result in greater GHG emissions.

12.70 GHGs are gases which have the potential to increase atmospheric temperatures, and which contribute to climate change. The Proposed Development will lead to the direct and indirect release of GHGs, both during the deconstruction and construction phase, and throughout its lifetime. This assessment estimates the GHG emissions associated with the Proposed Development taking a lifecycle approach[7] and presents the embedded design measures provided by the scheme to avoid and reduce its direct and indirect GHG emissions.

Scope of the Assessment

12.71 The EIA Regulations require that EIAs have consideration to climate change and require that the assessment provides: "*A description of the likely significant effects of the development on the environment resulting from, inter alia… (f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change".*

12.72 The impact of future climate change on the resilience of the Proposed Development has been addressed within Part A of this ES chapter. This assessment (Part B) covers the impacts of the project on climate through the quantification of GHGs resulting from the Proposed Development. This assessment provides an estimate of GHG emissions in the first year of occupation (2030) and over the lifetime of the Proposed Development.

12.73 Relevant policy and guidance to this assessment is set out in **ES Volume 3, Appendix: Climate Change – Annex 1**.

Defining the Baseline

12.74 The site currently comprises the existing Euston Tower and Regent's Place Plaza, a pedestrianised area within Regent's Place. The building will be partially demolished, the material from which will inherently incorporate embedded carbon. To provide a conservative assessment, the baseline is assumed to be zero, as the embedded carbon emissions associated with construction already reflect the net change.

12.75 The baseline for the operational assessment relates to the energy emissions generated by the current use of the site, maintenance associated with its upkeep and traffic generated by the existing car park. The site is currently not in use, with the exception of the retail floorspace at grade level, and as a worst-case, the baseline for the operational assessment is assumed to be zero. The existing building has experienced an occupancy level of less than 70% over the past decade and has remained vacant and stripped out since 2021, apart from the retail floorspace. Any GHG emissions from the Proposed Development will be considered as being new and therefore will represent a worst-case to changes in GHG emissions.

Evolution of the Baseline

12.76 If the Proposed Development was not to come forward, it is expected that the site would remain in its current, predominantly vacant state for the foreseeable future.

Impact Assessment Methodology

12.77 The assessment has taken a whole life approach to develop a GHG footprint for the Proposed Development. The footprint sources considered include GHG emissions:

- Embodied in the material used in the construction of the Proposed Development;
- From construction site activities (e.g., construction plant, site offices, welfare facilities, waste etc.);
- From transport movements during the construction and operational phases;
- From energy consumed by the operation of the Proposed Development;
- From the operational repair, maintenance and refurbishment of the Proposed Development;
- From potable water supply and treatment during operation of the Proposed Development; and
- From the deconstruction of the Proposed Development at the end of its lifetime.

12.78 GHG emissions from the disposal of waste generated by the Proposed Development have been scoped out of the assessment, due to uncertainties in input data and them contributing only a small amount to the total Proposed Development GHG footprint. The exclusion of this GHG source will not materially affect the GHG footprint or assessment conclusions and consideration to embedded design measures to minimise waste are provided in this assessment.

12.79 Table 12.2 sets out the GHG assessment scenarios examined by the assessment, key sources of data and methodologies used.

12.80 The metric for assessing the climate change impacts of GHG emissions in this assessment is Global Warming Potential (GWP). This is expressed in units of CO_2 equivalent (CO_2e) over 100 years. This allows for the emissions of the seven key GHG: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF_3) and sulphur hexafluoride (SF_6) expressed in terms of their equivalent global warming potential in mass of CO_2e.

12.81 Emissions associated with the deconstruction and construction phase of the Proposed Development are calculated for the whole construction phase and annualised emissions based on the anticipated construction period, which is approximately 5 years and 5 months based on information in **ES Volume 1, Chapter 5: Deconstruction and Construction**. The construction phase GHG emissions have therefore been annualised assuming a 5-year construction phase to be conservative (i.e., this will result in slightly higher annual emissions).

12.82 As discussed above, the energy and transport GHG emissions associated with the current use at the site and with the Proposed Development have been assumed to be zero as the site has no current use, except for the retail floorspace. Emissions associated with repair, maintenance and refurbishment have also been assumed as zero.

12.83 The GHG assessment (using the methodologies referenced in Table 12.2) is based on an estimated operational lifetime of 60 years, which is a typical assumption for a development of this type and is in accordance with British Standard EN 15978:2011.

12.84 The 'net emissions' are the change in the GHG emissions between the baseline and the Proposed Development, taking account of GHG reduction measures. Offsetting of emissions is also considered in the calculation of residual net GHG emissions.

[7] *GXN (2023) Euston Tower Circular Economy Statement*

Table 12.2 GHG Assessment Scenarios

Development Phase	Baseline	Proposed Development	Methods and Data Sources	Reference
Enabling Works and Construction				
Embodied Carbon	The baseline is assumed to be zero.	Emissions associated with the extraction and processing of the materials required to construct the Proposed Development ('cradle to gate').	Module A1-A3 emissions as presented in the Whole Life Carbon assessment	Whole Life-Cycle Carbon Assessment[1]
Transport	The baseline is assumed to be zero.	Emissions associated with traffic generated by the deconstruction and construction of the Proposed Development.	Module A4 emissions as presented in the Whole Life Carbon assessment.	Whole Life-Cycle Carbon Assessment
Construction Site Activities	The baseline is assumed to be zero.	Emissions associated with energy consumption for site accommodation and plant use during construction works	Module A5 emissions as presented in the Whole Life Carbon assessment.	Whole Life-Cycle Carbon Assessment
Operation				
Repair, Maintenance and Refurbishment	The baseline is assumed to be zero.	Emissions associated with the operational repair, maintenance and refurbishment of the Proposed Development.	Module B1-B5 emissions from use, repair, maintenance and refurbishment during the building's lifetime as presented in the Whole Life Carbon assessment.	Whole Life-Cycle Carbon Assessment
Transport	The baseline is assumed to be zero.	Emissions associated with traffic generated by the operation of the Proposed Development in the first year of operation (2030).	Application of calculated 2030 GHG factors to km travelled by mode from transport assessment.	Transport Consultant[8]
Energy	The baseline is assumed to be zero.	Emissions from energy use associated with operation of the Proposed Development, taking account of measures to reduce energy consumption and utilise renewable energy on-site.	CO_2 from energy use for the Proposed Development taking into account savings from the Energy Statement.	Energy Statement[9]
Water Supply and Treatment	The baseline is assumed to be zero.	Emissions associated with supply of potable water and treatment of wastewater.	Module B7 emissions as presented in the Whole Life Carbon assessment.	Whole Life Carbon Assessment
Deconstruction	n/a	Emissions associated with deconstruction activities of the Proposed Development.	Modules C1-C4 deconstruction/demolition); transport; materials re-used or recycled; and disposal emissions associated with deconstruction activities and generated waste.	Whole Life Carbon Assessment

Deconstruction and Construction

12.85 GHGs associated with the deconstruction and construction of the Proposed Development relate to those embedded in the materials from which it is constructed, and with construction site activities and vehicle movements generated during the construction stage. Information relating to the emissions have been sourced from the WLC assessment[10].

Embedded Carbon

12.86 Emissions from the manufacturing of construction materials have been sourced from the WLC assessment[10]. These correspond to modules A1-A3 of a carbon lifecycle assessment as defined in RICS[11] and GLA[12] guidance.

Construction Traffic

12.87 Emissions from the construction traffic have been sourced from the WLC assessment[10]. These correspond to module A4 of a carbon lifecycle assessment as defined in RICS[11] and GLA[12] guidance.

Construction Site Activities

12.88 Emissions from energy consumption for site accommodation and plant use during construction works have been sourced from the WLC assessment[10]. These correspond to module A5 of a carbon lifecycle assessment as defined in RICS[11] and GLA[12] guidance.

Completed Development

12.89 GHGs associated with the operation of the Proposed Development relate to emissions from repair, maintenance and refurbishment, transport, energy use and water supply and treatment.

Repair, Maintenance and Refurbishment

12.90 Over the lifetime of the Proposed Development there will be GHG emissions associated with the repair, maintenance and refurbishment[13] of the building. These emissions are effectively 'unregulated' as there is no policy or standard for establishing compliance nor is there published data on good practice against which developments can be benchmarked. Nonetheless, emissions from repair, maintenance and refurbishment have been considered in the GHG assessment based on modules B1-B5 within the WLC assessment[10].

Transport

12.91 GHG emissions factors for transport have been derived from the DfT's WebTAG databook[14]. A summary of the 2030 (the first year of operation of the Proposed Development). GHG emission factors for selected modes of transport used in this GHG assessment are provided in Table 12.3. The WebTAG data has been used to derive GHG emissions for each year out to 2050 for the purposes of calculating the Proposed Development's lifetime transport emissions. It has been assumed that, from 2050, the transport emissions are net zero in line with Government's commitments to net zero carbon by 2050 (see Paragraphs 12.97 to 12.100).

Table 12.3 2030 Transport GHG Factors by Selected Mode

Activity	Type	Unit	Calculated 2030 Factor (kg CO2e)
Car Driver	Average Car	km	0.1295
London Taxis	Black cab	km	0.2710
London Bus/Coach	Local London bus[a]	Passenger.km	0.0772
Rail	London Underground	Passenger.km	0.0128
	National Rail	Passenger.km	0.0163

[a] The GHG factor for London buses has been obtained from BEIS data[15] for company reporting as bus emission factors are not available in DfT's WebTAG.

[8] Velocity Transport Planning Ltd (2023) Euston Tower Transport Assessment
[9] Arup (2023) Energy Statement
[10] Sweco UK (2023) Whole Life-Cycle Carbon Assessment
[11] RICS, 2017. Whole life carbon assessment for the built environment
[12] GLA, 2020. Whole Life-Cycle Carbon Assessments guidance Pre-consultation draft (April 2020)

[13] Refurbishment refers to ongoing refurbishment of elements of the buildings as required during its estimated 60-year lifetime and does not include a complete whole-building refurbishment, as this would occur at the end of the buildings' practical life and would be subject to a future lifecycle GHG assessment.
[14] Department for Transport (2023) TAG data book May 2023 v1.21. Available at: https://www.gov.uk/government/publications/tag-data-book
[15] BEIS (2022) UK Government GHG Conversion Factors for Company Reporting

12.92 The calculation of transportation GHG emissions is carried out by multiplying the transport GHG factors detailed in Table 12.3 by km travelled by mode, calculated using Trip Generation per mode data, and the average distance travelled by mode, provided by the Transport Consultants.

Energy Consumption

12.93 Baseline energy consumption as a result of the operation of the existing retail and office uses and car park has been assumed to be zero. CO_2 emitted as a result of the running of the energy systems employed by the Proposed Development have been obtained from the Energy Statement[9] (see **ES Volume 3, Appendix: Greenhouse Gases – Annex 2**). Further detail on the CO_2 factors and CO_2 emissions from energy consumption are provided in the Energy Assessment.

12.94 The assessment considers regulated energy consumption, which is energy consumption from heating and cooling, lighting, and on-site infrastructure such as lifts, and unregulated energy consumption, which is electricity consumption from the behaviour of the building's users, such as personal electrical appliances (phones, laptops, televisions etc.), and kitchen appliances. Energy consumption corresponds to module B6 of a carbon lifecycle assessment, as defined in RICS[11] and GLA guidance[12]

Water Supply and Treatment

12.95 GHG emissions associated with water supply been obtained from the whole life-cycle assessment[10], which correspond to module B7 of a whole life carbon assessment.

Deconstruction at End of Life

12.96 Emissions associated with the end-of-life phase of the Proposed Development have been sourced from the whole life-cycle assessment[10]. These correspond to modules C1-C4 of a whole life carbon assessment, and include emissions associated with:

- Site activities associated with the disassembly of temporary buildings;
- Transportation of disassembly materials away from site;
- The treatment and processing of materials for re-use or recycling; and
- Final disposal of materials that are not re-used or recycled.

Net Zero Policy Implications

12.97 The UK has legislated a 2050 net zero target following recommendations and analysis completed by the Committee on Climate Change (CCC)[16]. The CCC's Net Zero report[17] has established a "Further Ambition" scenario which considers feasible and cost-effective policy and technology interventions to ensure the UK can meet its new net zero target.

12.98 For power generation under this scenario, the CCC considers that 100% of power generation by 2050 will be low carbon, and for ground transport it forecasts that all ground transportation (apart from small number of Heavy Goods Vehicles (HGVs)) will be electrically powered. The CCC therefore forecasts that power and ground transportation sectors will be largely decarbonised by 2050 with any residual emissions removed through technical and/ or natural means.

12.99 The implications of the UK adopting the net zero target are that it is reasonable to assume that Government policies will be brought forward to ensure the net zero target is achieved. The Government announcement bringing forward the ban on sale of new vehicles that are not electrically powered to 2035 is an example of policy that is being developed.

12.100 It is, therefore, anticipated that all operational and transportation emissions associated with the Proposed Development are likely to be zero by 2050 at the latest.

Assumptions and Limitations

12.101 The following assumptions and limitations are relevant to the GHG assessment:

- The Proposed Development is complete and operating at full capacity in 2030;
- The construction phase will be completed over a period of five years;
- Construction of the Proposed Development involves the buildings and infrastructure, and transport movements described in **ES Volume 1, Chapter 5: Deconstruction and Construction**;
- All materials used in construction are new, with no reuse or repurposing of materials (as a worst-case assumption); and
- Measures set out within the Energy Statement[9] to minimise emissions from energy consumption and embodied carbon will be implemented.

Methodology for Defining Effects

Receptors and Receptor Sensitivity

12.102 The assessment of GHGs does not include identification of sensitive receptors, as GHG emissions do not directly affect specific locations or receptors but lead to indirect effects by contributing to climate change. Identification of sensitive areas for climate change has been undertaken by the IPCC[18]. Impacts on specific areas are not included within this assessment, since the impacts of GHG emissions will affect the global atmosphere, and therefore need to be considered in a total context, rather than on localised areas.

Magnitude of Impact

12.103 There are no impact descriptors for GHG emissions; the approach taken is, therefore, to consider the calculated GHG emissions from the Proposed Development in the context of GHG emissions budgets for the GLA area as published within the London Environment Strategy Implementation Plan[19] and in the context of GHG emissions for the borough for 2020[20] as published within the London Energy and Greenhouse Gas Inventory (LEGGI)[21].

Defining the Effect

12.104 For GHG emissions there are no recognised criteria and thresholds that relate to the quantum of GHG emissions released.

12.105 In terms of defining significance, guidance from Institute of Environmental Management and Assessment (IEMA)[22] has been adopted, which has identified three underlying principles to inform the assessment of significance, as follows:

- GHG emissions from all projects will contribute to climate change; the largest interrelated cumulative environmental effect;
- The consequences of a changing climate have the potential to lead to significant environmental effects on all topics in the EIA Directive – e.g., population, fauna, soil, etc.; and
- GHG emissions have a combined environmental effect that is approaching a scientifically defined environmental limit, as such any GHG emissions or reductions from a project might be considered to be significant.

[16] Net zero has been defined by the CCC to allow for GHG removals to offset any residual GHG emissions in 2050 so that the overall balance of emissions is zero.
[17] Committee on Climate Change (2019) Net Zero. The UKs contribution to stopping global warming, Available: https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming
[18] The Intergovernmental Panel on Climate Change (2014) AR5 Climate Change 2014: Impacts, Adaptation, and Vulnerability.
[19] GLA (2023) London Environment Strategy Implementation Plan.
[20] The latest available year.
[21] London Energy and Greenhouse Gas Inventory (2020) London Energy and Greenhouse Gas Inventory for 2020, Available: https://data.london.gov.uk/dataset/leggiEnergyandGreenhouse,carbonreductiontargetsforLondon
[22] IEMA (2022) EIA Guide to: Assessing greenhouse gas emissions and evaluating their significance. 2nd edition 'Assessing Greenhouse Gas Emissions and Evaluating their Significance.'

12.106 Based on these principles, IEMA concludes that:

- When evaluating significance, all new GHG emissions contribute to a negative environmental impact, however, some projects will replace existing development or baseline activity that has a higher GHG profile. The significance of a project's emissions should therefore be based on its net impact over its lifetime, which may be positive, negative or negligible;
- Where GHG emissions cannot be avoided, the goal of the EIA process should be to reduce the project's residual emissions at all stages; and
- Where GHG emissions remain significant, but cannot be further reduced, approaches to compensate the project's remaining emissions should be considered.

12.107 In advising on the significance of any net change in GHG emission resulting from a development, IEMA identifies that in order to limit the adverse effects from climate change, global temperature change needs to be limited to well below 2°C, aiming for 1.5°C. The implication of this objective is that global emissions need to fall to net zero by 2050.

12.108 The UK's response to limiting climate change is enshrined in law through the Climate Change Act[23] which requires the UK economy to be net zero by 2050 following a trajectory set through five-yearly carbon budgets. The 2050 target (and interim budgets set to date) are, according to the CCC, compatible with the required magnitude and rate of GHG emissions reductions required in the UK to meet the goals of the Paris Agreement, thereby limiting severe adverse effects.

12.109 It follows, therefore, that the significance of any net change of GHG resulting from a development is not so much whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions consistent with a trajectory towards net zero by 2050.

12.110 To establish the significance of the GHG emissions from a development therefore requires judgements on:

- The consistency with policy requirements, since these have been specified to ensure the economy decarbonises in line with the UK's net zero target; and
- The degree to which the development has sought to mitigate its emissions.

12.111 Examining each of these dimensions allows the assessment to make professional judgement on the likely scale and significance of effects based on a set of significance criteria established in the IEMA guidance, summarised in Table 12.4.

Table 12.4 GHG Significance Criteria

Significance Rating	Description	Criteria to Determine Significance of Net GHG Emissions
Major Adverse	A project with major adverse effects is locking in emissions and does not make a meaningful contribution to the UK's trajectory towards net zero.	The Proposed Development's net GHG impacts are: • Not mitigated or are only compliant with do-minimum standards set through regulation; and • Do not provide further reductions required by existing local and national policy for projects of this type.
Moderate Adverse	A project with moderate adverse effects falls short of fully contributing to the UK's trajectory towards net zero.	The Proposed Development's net GHG impacts are: • Partially mitigated; and • May partially meet the applicable existing and emerging policy requirements but would not fully contribute to decarbonisation in line with local and national policy goals for projects of this type.
Minor Adverse	A project with minor adverse effects is fully in line with measures necessary to achieve the UK's trajectory towards net zero.	The Proposed Development's net GHG impacts are: • Fully consistent with applicable existing and emerging policy requirements; and • In line good practice design standards for projects of this type.
Negligible	A project with negligible effects provides GHG performance that is well 'ahead of the curve' for the trajectory towards net zero and has minimal residual emissions.	The Proposed Development's net GHG impacts are: • Reduced through measures that go well beyond existing and emerging policy; and • Better than good practice design standards for projects of this type, such that radical decarbonisation or net zero is achieved well before 2050.
Beneficial	A project with beneficial effects substantially exceeds net zero requirements with a positive climate impact.	The Proposed Development's net GHG impacts are: • Below zero; and • It causes a reduction in atmospheric GHG concentrations, whether directly or indirectly, compared to the without-project baseline.

12.112 IEMA advises that:

- Major and moderate adverse and beneficial effects should be considered significant in the context of EIA;
- In the case of large-scale developments, irrespective of the level of mitigation, if net GHG emissions exceed 5% of UK or devolved administrations carbon budget, that this is a level of change that is considered significant;
- Meeting the minimum standards set through existing policy or regulation cannot necessarily be taken as evidence of avoiding a significant adverse effect, and it is recommended therefore that the assessment also considers emerging policy/ standards and the guidance of expert bodies such as the CCC on necessary policy developments; and
- To aid decision making it is important to inform the decision maker about the relative severity of environmental effects such that they can be weighed in a planning balance. Therefore, it is essential to provide context for the magnitude of GHG emissions reported in the EIA in a way that aids evaluation of these effects by the decision maker. IEMA advise that context can be provided through comparison of the whole life GHG emissions resulting from the development with national, local and sectoral totals, as well as carbon budgets.

12.113 Therefore, the assessment of significance is established over two steps as follows:

Step 1: Establish Context of GHG Emissions

12.114 Context for decision making is provided by comparing the net change in the whole life GHG emissions resulting from the development with local and regional GHG emissions totals, and carbon budgets.

Step 2: Determine Scale Significance of Effects

12.115 The Scale and Significance of effects is established through applying the criteria detailed in Table 12.4 based on professional judgement that considers:

- The consistency of the development with national, regional, and local policies designed to limit GHG emissions and meet the UK's net zero target; and
- The robustness, timeliness and efficacy of mitigation measures proposed to avoid, reduce and compensate GHG emissions.

12.116 In terms of mitigation, IEMA recommends that mitigation should in the first instance seek to avoid GHG emissions[22]. Where GHG emissions cannot be avoided, the Proposed Development should aim to reduce the residual significance of a project's emissions at all stages. Where additional GHG emissions remain but cannot be further reduced at source, approaches should be considered that compensate the project's remaining emissions, for example through offsetting.

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

Geographic Extent of Effects

12.117 The geographic extent of effects arising from the Proposed Development will extend beyond the Development boundary, and owing to the nature of GCG emissions could well extend across the entire country, and therefore the extent is considered to be 'global'.

Effect Duration

12.118 GHG emissions will be generated for the lifetime of the project (or at least up to 2050) by which time it might be expected that net GHG emissions will be zero. They are, therefore, considered to be permanent.

Direct and Indirect

12.119 The Proposed Development's GHG emissions will not have any direct environmental effects, but contribute to climate change, which is an indirect environmental effect.

Cumulative Effects

12.120 GHG emissions from all projects will contribute to climate change; globally, not just locally. As set out in the IEMA guidance:

"Effects of GHG emissions from specific cumulative projects therefore in general should not be individually assessed, as there is no basis for selecting any particular (or more than one) cumulative project that has GHG emissions for assessment over any other".

12.121 This statement relates to 'cumulative' on a global scale. The definition of 'cumulative effects' in the context of GHGs and climate change therefore goes far beyond the typical definition of cumulative effects for EIA, which tends to focus on other proposed projects in the vicinity of the Proposed Development.

Baseline Conditions

Deconstruction and Construction

12.122 The Proposed Development will require the partial deconstruction of the existing Euston Tower building. Any embedded carbon in the building fabric is not additional to this project; the reuse of these materials results in a reduced requirement for new construction materials, and consequently, a reduction in embedded carbon generated during construction.

12.123 The baseline is therefore assumed to be zero, as the embedded carbon emissions associated with construction already reflect the net change.

Operation

12.124 Baseline GHG emissions associated with repairs, maintenance and refurbishment, as well as transport, energy and water supply emissions are assumed to be zero as the site is not in use.

Table 12.5 Summary of Baseline GHG Emissions

Development Phase		Baseline CO_2e Emissions (tonnes/annum)	Comment/Rationale
Enabling Works and Construction		0	Site is not in use
Operation	Repair, Maintenance and Refurbishment	0	Site is not in use
	Transport	0	Site is not in use
	Energy	0	Site is not in use
	Water Supply	0	Site is not in use
Total		0	Construction + Operation

Embedded Mitigation

12.125 A range of mitigation measures are embedded into the design of the Proposed Development to avoid and reduce GHG emissions during its construction and operation.

Deconstruction and Construction Mitigation

12.126 Reducing GHG emissions during construction would include consideration of minimising the use of materials as well as the procurement of sustainable materials, with consideration of the embodied carbon footprint of the material, from the extraction of the raw materials to the production of the final construction products, and the transport of products between the factory and Proposed Development. As aforementioned in Paragraph 12.69 31% of the existing building will be retained, which in turn is likely to lead to a reduction in the GHG emissions during construction and the reuse/recycling/upcycling of any materials from the deconstruction.

12.127 The following measures will be considered when selecting materials for the construction of the Proposed Development to reduce embedded carbon emissions where possible:

- Optimisation of structural, façade and mechanical, electrical and plumbing (MEP) designs to reduce material intensity;
- Improved concrete specification and higher quantities of cement replacements;
- Improved reinforcement specification; and
- High recycled content aluminium in facades.

Completed Development

Transport

12.128 The following measures are embedded within the design of the Proposed Development to influence sustainable travel behaviour from the site:

- The Proposed Development will be 'car-free'. The car free scheme will discourage the use of private cars and encourage the use of existing public transport options;
- 861 secure cycle spaces, for the Proposed Development, will be provided, of which 43 spaces will be for accessible bikes; and
- The Proposed Development will provide improvements to the public realm and streetscape to enhance the pedestrian experience.

12.129 Overall, the site itself is in a highly accessible location (PTAL score of 6b) providing a wide range of transport services, being in close proximity to number bus, underground and rail routes.

Energy Consumption

12.130 The Proposed Development incorporates a suite of design measures to maximise energy efficiency, reduce energy demand and generate and supply renewable energy, including:

- A fully electric energy strategy with no gas supply to the Proposed Development, including Air Source Heat Pumps (ASHPs) and Solar Photovoltaics (PVs);
- Integration of openable elements in the façades allowing occupants to benefit from fresh air in the perimeter and aids in further reducing reliance on colling during the summer months; and
- Energy-efficient equipment will be used throughout the Proposed Development to reduce energy consumption.

12.131 The GHG emissions saving benefits of these measures are embedded in the Proposed Development's GHG footprint set out in this Chapter.

Potential Effects

Deconstruction and Construction

Embedded Carbon

12.132 The total embedded CO_2e emissions for the Proposed Development, as presented in modules A1-A3 of the whole life-cycle assessment[10], are 44,186 tonnes, based on a 5-year construction programme this equates to 8,837 tonnes/annum.

12.133 Since the Proposed Development is to be constructed on land that is already developed, and does not lead to a loss in habitat, forest or agricultural land, no land use change GHG emissions are assumed to occur.

Transport

12.134 The total CO_2e emissions from transport during construction of the Proposed Development, as presented in module A4 of the whole life-cycle assessment[10], are 6,630 tonnes, based on a 5-yearconstruction programme this equates to 1,326 tonnes/annum.

Site Activities

12.135 The total embedded CO_2e emissions from site activities during construction of the Proposed Development, as presented in module A5 of the whole life-cycle assessment[10], are 4,330 tonnes, based on a 5-year construction programme this equates to 866 tonnes/annum.

Operation

Repair, Maintenance and Refurbishment

12.136 GHG emissions from repair, maintenance and refurbishment during the Proposed Development's lifetime have been sourced from the whole life-cycle assessment[10] (modules B1-B5) and are 39,055 tonnes, or 651 tonnes/annum based on a lifetime of 60 years.

Transport

12.137 The assessment of transport related GHG emissions for the completed Proposed Development in the first year of operation (2030) are presented in Table 12.6. The assessment multiplies the calculated 2030 GHG emission factors for each mode of travel (see Table 12.3) by the distance travelled per mode. Distance travelled was calculated from the number of trips per mode and the average distance travelled by mode, as advised by the Transport Consultant.

Table 12.6 Assessment of GHG Emissions from Operational Transport

Mode	Emission Factors CO_2e per km or passenger km (from Table 6.2)	Distance Travelled per Annum (km) [a] Completed Proposed Development (all plots)	CO_2e Tonnes (per annum) [b]	
			2030 Opening Year	Lifetime Emissions
National Rail	0.0163	21,209,244	345	6,254
London Underground	0.0128	28,872,696	368	6,671
Bus/tram	0.0772	9,200,007	710	43,313
Car Driver	0.1295	0	0	0
London Taxis	0.2710	510,515	138	6,892
Cycle	-	3,991,640	0	0
Walk	-	899,451	0	0
Total	-	64,683,554	**1,562**	**63,131**

[a] Except national rail, underground and bus, which are passenger km.

[b] CO_2e emissions are calculated by multiplying distance travelled by CO_2e factors by mode from Table 6.2.

Energy Consumption

12.138 The CO_2 emissions from energy consumption of the Proposed Development are described in the Energy Statement[9]. The Energy Statement compares the Proposed Development to a notional "baseline" of compliance with Part L Building Regulations.

12.139 Table 12.7 summarises the improvement in performance for the Proposed Development for regulated CO_2 emissions, taking into account measures to address the Mayor's Climate Change Strategy to be lean, be clean, be green.

Table 12.7 Assessment of CO2 Emissions from Energy Consumption [a]

Item	Site-Wide (Tonnes CO_2 per annum)
REGULATED EMISSIONS	
Baseline: Part L compliance	326
After energy demand reduction (be lean)	292
Total % Improvement	10%
After heat network connection (be clean)	292
% Improvement	0%
After renewable energy (be green)	279
Total % Improvement	4%
Net Emissions [b]	299
UNREGULATED EMISSIONS	
With Energy Strategy	49
REGULATED AND UNREGULATED	
Net Emissions [b]	348

Notes

[a] As described in the Energy Statement[9].

[b] Net emissions do not take into account offsets to meet GLA target zero carbon, which are discussed in the Mitigation section of this ES chapter.

12.140 Table 12.7 shows that the non-domestic regulated components of the Proposed Development will achieve a 14% improvement in carbon emissions over Part L 2013 compliance, which is below the Mayor's target of 35% improvement.

12.141 Unregulated emissions do not require specific target reductions compared to a nominal baseline under the London Plan[24]. The London Plan requires all residual regulated emissions to be offset to zero, and so the Proposed Development will provide offsetting to further reduce the carbon emissions from regulated energy consumption. Carbon offsetting is discussed in the mitigation section of this report. The London Plan also requires that minimum of 15% reductions in non-domestic emissions are met through energy efficiency measures; this is not the case for the Proposed Development which achieves a 14% reduction.

12.142 To comply with the London Plan[24], the cash in-lieu contribution to offset regulated CO_2 emissions has been calculated as £795,581.

[24] *GLA (2021) The London Plan 2021*

Water Supply and Treatment

12.143 GHG emissions associated with water supply and treatment during the operational phase of the Proposed Development, as presented in module B7 of the whole life-cycle assessment[10], are 426 tonnes; this equates to 7 tonnes per annum based on a 60-year lifetime.

End of Life

12.144 The total embedded CO_2e emissions associated with the end-of-life stage of the Proposed Development, as presented in modules C1-C4 of the WLC assessment[10], are 4,470 tonnes.

12.145 All of these emissions will occur at the end of the Proposed Development's life, and it is likely, due to decarbonisation of the economy to meet the net zero 2050 target, that there will be mechanisms in place to ensure these are at least net zero. In any case, they have been reported for completeness, but are not considered in the assessment of opening year emission, or comparison to regional and local emissions.

Total GHG Emission Footprint

12.146 Table 12.8 summarises the GHG emissions for the Proposed Development in the opening year for each footprint element. The GHG emissions from embedded materials used in construction are annualised based on the duration of the deconstruction and construction works (assumed to be 5 years (see Paragraph 12.81) and a 60-year life. Annualising the embedded GHG emissions allows them to be compared on a like-for-like basis to the operational GHG emissions which are reported on a per annum basis.

12.147 As shown in Table 12.8, the Proposed Development will result in a net increase in GHG emissions in the opening year of 13,597 tonnes.

Table 12.8 GHG Footprint for Proposed Development for Opening Year [a]

Development Stage	Footprint Element	Baseline (tonnes CO_2e per annum)	Opening Year (tonnes CO_2e per annum)	Lifetime Emissions (tonnes CO_2e)
Construction	Embedded	0	8,837	44,186
	Transport	0	1,326	6,630
	Site Activities	0	866	4,330
Operation	Repair, Maintenance and Refurbishment	0	651	39,055
	Energy	0	348	2,525
	Transport	0	1,562	63,131
	Water Supply and Treatment	0	7	426
TOTAL		0	**13,597**	**160,283**
End of Life	Deconstruction; Waste transport, processing and disposal	0	17,682	155,935

Notes:

[a] All figures are rounded.

[b] All emissions to occur at the end of the life of the Development. This is not an annualised value.

Total GHG Emissions (Deconstruction and Construction and Operation)

12.148 As detailed in paragraph 12.105, the IEMA guidance has been adopted to determine the likely significant effects of the Proposed Development and considers the following three underlying principles to inform the assessment of significance.

Step 1: GHG Context

12.149 The first step in determining the likely significant effects is to contextualise the Proposed Development's GHG emissions in the opening year to London-wide and local GHG emissions. The assessment is informed through comparison to CO_2e emissions budgets for the GLA Area and reported within the London Environment Strategy[25].

12.150 The GLA carbon budget for the period of 2028-2032 which includes the earliest opening year of the Proposed Development is 18.0 $MTCO_2e$/annum and equates to 3.6 MTCO2e/annum over this 5-year period. This budget excludes embedded carbon emissions, and therefore, the comparison of the Proposed Development's GHG emissions to the budget includes only the emissions from transport (construction and operational), site activities (deconstruction, construction and repair, maintenance, and refurbishment), energy and water supply and treatment for consistency.

12.151 A comparison of the GHG emissions of the Proposed Development from these sources to the GLA budget in 2030 shows the Proposed Development emissions (4,760 tonnes CO_2e) are 0.03% of the budget. As embodied carbon emissions will nearly all occur outside London, the comparison is conservative.

12.152 In terms of a local comparison, there is no equivalent GHG budget for the LBC, and therefore a comparison has been made against the 2020 LBC GHG emissions reported in the LEGGI. The LBC emissions in LEGGI for 2020 (the latest available year) are 935,000 tonnes CO_2e. The LEGGI data does not include embedded carbon emissions, and therefore the comparison of the Proposed Development's GHG emissions to these benchmarks includes only the emissions from transport (construction and operational), site activities (deconstruction, construction and repair, maintenance, and refurbishment), energy and water supply and treatment for consistency.

12.153 A comparison of the GHG emissions of the Proposed Development from these sources to the LBC emissions shows that emissions associated with the construction and operation of the Proposed Development (4,760 tonnes CO_2e / annum) are 0.5% of borough wide GHG emissions.

12.154 The comparison assumes that emissions from a typical construction year and a full 12-months of fully operational development all occur in the same year, which is worst-case. The comparison also ignores decarbonisation of the borough's emissions which will be lower in 2030 than in 2020. Regardless, the contribution is still small.

12.155 As the emissions associated with the operation of the Proposed Development relate to electrical energy consumption and ground transport, both of which will be decarbonised on the pathway to net zero by national measures and interventions, the Proposed Development will not limit the UK's ability to meet its net zero 2050 target. The principles of the IEMA guidance are that where GHGs cannot be avoided, that mitigation should be provided to minimise GHGs. The mitigation is discussed in the following section.

Step 2: Consistency with Policy

12.156 The second step in determining the likely significant effects is to contextualise the Proposed Development's GHG emissions, which is described in the following sections.

National Policies

12.157 In terms of national policy, the key national policy is the National Planning Policy Framework (NPPF)[26]. Paragraphs 154 b), 155 and 157 are of particular relevance to the GHG assessment, which are all within Part 14 of the NPPF.

12.158 Paragraph 154 b) requires that: *"New development should be planned 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."*

12.159 The Proposed Development has been designed using an energy efficient, fabric-first approach as described in the Energy Statement[9]. A range of measures have been implemented into the design, as discussed in Paragraph 12.130, to directly or indirectly reduce GHG emissions.

12.160 Paragraph 155 requires 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*

[25] GLA (2018) London Environment Strategy

[26] Department for Levelling Up, Housing & Communities (2023) National Planning Policy Framework.

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 colocating potential heat customers and suppliers."

12.161 Although this strictly this applies to development plans and therefore overlaps with local policies, discussed later in this section, the Proposed Development will employ the use of renewable energy (principally solar PV and ASHPs) within the building. The Proposed Development therefore complies with Paragraph 155 of the NPPF.

12.162 Paragraph 157 requires that: *"In determining planning applications, local planning authorities should expect new development to: a) 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 b) take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption."*

12.163 Compliance with the local development plan is discussed in the proceeding paragraphs, but as set out in the Energy Statement[9], the Proposed Development will be designed to ensure energy efficiency of building fabrics is maximised to maximise energy efficiency and reduce energy consumption, supplemented with renewable energy as needed to meet the requirements of Policy SI 2 of the London Plan and relevant LBC Local Plan policies. As such the Proposed Development does not conflict with Paragraph 157 of the NPPF.

12.164 In addition to the NPPF, it is appropriate to review how the Proposed Development aligns with national commitments to net zero by 2050. The CCC[27] has established a "balanced net zero pathway" which considers feasible and cost-effective policy and technology interventions to ensure the UK can meet its new net zero target.

12.165 For power generation under this scenario, the CCC consider that 100% of power generation by 2050 will be low carbon and for ground transport it forecasts that all ground transportation (apart from small number of HGVs) will be electrically powered. The CCC therefore forecast that power and ground transportation sectors are largely decarbonised by 2050 with any residual emissions removed through technical and or natural means.

12.166 It is therefore reasonable to assume that national policy measures will ensure that energy and transport emissions relating to the Proposed Development will be decarbonised, consistent with the UK's net zero target. The recent government announcement bringing forward the ban on sale of new vehicles that are not electrically powered to 2030 is an example of policy that is being developed. In addition, as described in the Energy Strategy, the Proposed Development will adopt an all-electric energy strategy, ensuring the Proposed Development is fully net zero ready in accordance with CCC advice and projections.

12.167 Importantly the Proposed Development has adopted measures that are supportive of national policies to meet net zero. Specifically, this includes:

- adopting a fabric-first approach to design to minimise energy demand;
- development of an all-electric energy strategy, with no use of fossil fuels; and
- delivering a car-free scheme with a focus on ensuring the majority of building users travel by sustainable or active modes of travel.

12.168 The Proposed Development has been demonstrated to be able to decarbonise in line with Government trajectories (see Paragraph 12.166) and will therefore not conflict with efforts to meet the national net zero target.

12.169 Overall, it is demonstrated that the Proposed Development complies with the requirements of national planning policy relevant to GHG emissions.

Regional Policies

12.170 The Mayor of London published the current 'London Plan' in March 2021. This is the Spatial Development Strategy for Greater London. The Development Plan for each London Borough must ultimately comply with the general requirements of the London Plan (2021).

12.171 The London Plan includes planning policies both for reducing energy consumption within buildings and, more significantly, for promoting the use of decentralised electricity generation and renewable energy technologies. These policies cover the requirements of each borough with respect to energy strategies and planning applications.

12.172 The London Plan recognises that energy efficiency should come before energy supply considerations and has suggested a simple strategy known as the Energy Hierarchy (Policy SI 2). The process follows good practice in the design of low carbon buildings and comprises four distinct 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. Monitor, verify and report on energy performance (Be Seen).

12.173 This strategy puts energy efficiency/conservation measures first 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, including to exploit local energy resources (such as secondary heat) and supply energy efficiently, 'Be Clean'. Sources of low or zero carbon and renewable energy technologies should then be examined for incorporation, 'Be Green'. Lastly, it is a requirement for developments to monitor and report energy performance post-construction to ensure that the actual carbon performance of the development is aligned with the Mayor's net zero carbon target, 'Be Seen'.

12.174 The London Plan (2021) requires a minimum on-site reduction of at least 35% beyond Building Regulation. Non-residential developments should aim to achieve 15% through energy efficiency measures alone. the policy also requires all development to achieve net zero, through offsetting residual emissions as necessary.

12.175 The Energy Statement[9] explains how the Proposed Development does comply with Policy SI 2 of the London Plan, through delivery of an energy efficient design with 14% reduction against Part L from energy efficiency measures and through offsetting as a cash in-lieu contribution to offset regulated CO_2 emissions (calculated as £795,581) to achieve net zero emissions from energy consumption.

Local Policies

12.176 The LBC Local Plan[28] was adopted in July 2017. The following policies are applicable to the GHG assessment.

12.177 Policy CC1: Climate change mitigation:

"The Council will require all development to minimise the effects of climate change and encourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation.

We will:

a. promote zero carbon development and require all development to reduce carbon dioxide emissions through following the steps in the energy hierarchy:
b. require all major development to demonstrate how London Plan targets for carbon dioxide emissions have been met;
c. ensure that the location of development and mix of land uses minimise the need to travel by car and help to support decentralised energy networks;
d. support and encourage sensitive energy efficiency improvements to existing buildings;
e. require all proposals that involve substantial demolition to demonstrate that it is not possible to retain and improve the existing building; and
f. expect all developments to optimise resource efficiency…'

12.178 The Proposed Development complies with the requirements of Policy CC1 by:

- Production of a detailed Energy Statement[9] for the Proposed Development assessing the design and performance of the buildings against the Mayor's Energy Hierarchy;

[27] *CCC, (2019). Net Zero, Technical report.*

[28] *LBC (2020) Tower Hamlets Local Plan 2031: Managing Growth and Sharing Benefits.*

- Adopting an energy efficient design, communal zero-emission ASHP heating, and renewable PV energy to achieve a 14% reduction in regulated carbon dioxide emissions below the Part L Building Regulations baseline;
- Offsetting the remaining regulated CO_2 through a cash in lieu contribution (see Paragraph 12.142);
- Provision of PV panels to provide reduction in regulated CO_2 emissions through on-site renewable energy generation; and
- Targeting a BREEAM 'excellent' rating.

Step 2 Mitigation Assessment

12.179 Table 12.9 sets out an assessment of the Proposed Development's approach to mitigation against the mitigation principles described in IEMA guidance, to avoid and reduce GHGs where practicable and compensate for any residual emissions. Embedded mitigation measures are summarised in Paragraphs 12.125 to 12.131 and additional mitigation measures are described in Paragraphs 12.184 to 12.188.

Table 12.9 Proposed Development Approach to Mitigation in Accordance with IEMA Mitigation Principles

Development Stage	Embedded Mitigation	Additional Mitigation
Construction	Reuse of material where possible. Minimising waste to landfill. Good practice measures to minimise energy use from construction activities. Consideration to use of construction materials with low embedded carbon.	Development of a CMP, SWMP and CLP.
Operation: Repair, maintenance and refurbishment	N/A	It is anticipated that materials used in repair, maintenance and refurbishment will be sourced sustainably and in line with relevant policy requirements at the time the works are undertaken.
Operation: Transport	Measures are adopted into the design of the Proposed Development that aim to reduce car journeys and encourage low/zero carbon alternatives (e.g., cycling/walking).	A Travel Plan will also be implemented to promote sustainable transport.
Operation: Energy	Energy saving measures to meet the Mayor's climate change strategy, which requires 35% carbon reduction beyond Building Regulation. Non-residential developments should aim to achieve 15% through energy efficiency measures alone. The Proposed Developments includes a 14% reduction against Part L and includes offsetting via cash in-lieu.	Regulated emissions will be reduced to zero via offset payment, in line with GLA guidelines.

12.180 The mitigation measures set out in Table 12.9 are judged to represent good practice and be proportionate and consistent with developments of this scale and type.

Residual Effects

12.181 Table 12.10 summarises the residual significance of effects of the Proposed Development's GHG emissions, following the IEMA approach summarised in Table 12.4.

12.182 The assessment considers the context of the Proposed Development's GHG emissions, as well as the compliance of the Proposed Development will relevant national and local policies and the robustness, timeliness and efficacy of the mitigation to avoid and reduce GHG emissions.

Table 12.10 Proposed Development Assessment of Effects in Accordance with IEMA Guidance

IEMA Step	Description	Assessment	Alignment with IEMA Guidance (Table 12.4)
Step 1	Context	The Proposed Development's emissions are a small component of local (1.1 %) and regional (0.06%) GHG emissions and budgets. The Proposed Development provides net zero regulated energy emissions through offsetting and can decarbonise in line with national trajectories to net zero.	Minor Adverse: Fully in line with measures necessary to achieve the UK's trajectory towards net zero.
Step 2	Consistency with Policy	The Proposed Development has been demonstrated to meet the requirements of national, regional and local policies relating to GHG emissions and climate change.	Minor Adverse: The Proposed Development is fully consistent with applicable existing policy requirements.
	Robustness, timeliness and efficacy of mitigation	The Proposed Development has adopted good practice measures to avoid and reduce GHG emissions during the construction phase and over the lifetime of its operation. The majority of the measures to avoid and reduce GHGs are designed in and will therefore be delivered during construction or from the occupation of Proposed Development onwards.	Minor Adverse: The GHG mitigation provided by the Proposed Development is in line with best practice design standards for projects of this type.

12.183 Although the Proposed Development contributes to local and national GHG emissions, it is considered that these have been minimised through an appropriate degree of mitigation consistent with best practice and IEMA guidance, and ensure the Proposed Development is compliant with the UK's target for net zero carbon emissions by 2050. The Proposed Development has been demonstrated to meet all relevant policies related to GHG emissions and climate change. Based on the significance criteria set out in Table 12.4, it is therefore judged that the Proposed Development will have a **Minor Adverse impact** on GHG emissions, and thus the effect is **'not significant'**.

Mitigation, Monitoring And Residual Effects

12.184 Additional mitigation measures and environmental management strategies that will help directly or indirectly reduce GHG emissions during construction and operation of the Proposed Development are summarised in the following sections. The measures set out below are additional to the embedded mitigation measures described in Paragraphs 12.125 to 12.131.

Deconstruction and Construction Mitigation

12.185 An Outline Construction Management Plan (CMP) has been prepared to support this planning application and a finalised version of the CMP (on appointment of the Principal Contractor) will be conditioned with the granting of planning permission. The CMP detail control measures and activities to be undertaken to minimise environmental effects, including matters regarding waste management, and energy and water usage.

12.186 A Site Waste Management Plan (SWMP) will be developed to demonstrate how the waste will be minimised and managed. Construction waste will be minimised by the re-use of existing materials, however, where this is not possible the waste will be sorted to maximise recycling and to divert as much from landfill as possible.

12.187 In terms of construction transport, a Construction Logistics Plan (CLP) will be implemented to reduce the environmental impact from the construction stage and to optimise the efficient delivery and collection of goods and materials to the site.

Completed Development Mitigation

Transport

12.188 An Outline Travel Plan[29] and a Delivery and Servicing Plan[30] have been developed for the Proposed Development and they accompany the planning application. Both Plans set out measures to minimise car use and facilitate the sustainable movement of staff, visitors, and goods to and from the Proposed Development.

[29] *Velocity Transport Planning Ltd, 2023. Euston Tower, Regent's Place*

[30] *Velocity Transport Planning Ltd, 2023. Euston Tower, Regent's Place*

Residual Effects

12.189 All of the residual effects resulting from the Proposed Development, are presented in Table 12.10, identifying whether the effect is significant or not.

Assessment Of The Future Environment

Evolution of the Baseline Scenario

12.190 If the Proposed Development were not to come forward, then it would remain in its current unused state. The emissions from the existing unused site would remain zero.

Cumulative Effects Assessment

12.191 GHG emissions from all projects will contribute to climate change; globally, not just locally. As set out in the IEMA guidance:

"Effects of GHG emissions from specific cumulative projects therefore in general should not be individually assessed, as there is no basis for selecting any particular (or more than one) cumulative project that has GHG emissions for assessment over any other".

12.192 This statement relates to 'cumulative' on a global scale. The definition of 'cumulative effects' in the context of GHGs and climate change therefore goes far beyond the typical definition of cumulative effects for EIA, which tends to focus on other proposed projects in the vicinity of the Proposed Development.

12.193 The EIA has identified eight cumulative schemes in the assessment. It is difficult to quantify the GHG emissions from each of these cumulative schemes and as discussed above, cumulative contributions to climate change from GHGs will extend well beyond these schemes. It is expected that mitigation will be provided, principally for embodied carbon during construction and operational energy and transport, which are policy compliant and work to minimise the on-site GHG emissions and reduce the lifetime GHG emissions of each cumulative scheme.

Likely Significant Effects

12.194 The GHG assessment has identified that the Proposed Development will lead to GHG emissions, however, these are described as Minor Adverse and therefore 'not significant' in accordance with IEMA best practice guidance on the assessment of GHGs for EIA.

12.195 This conclusion is based on the GHG emissions generated by the Proposed Development being small in the context of local and regional emissions and GHG budgets, the Proposed Development being compliant will all relevant policies relating to GHG and climate change, and the fact that the Proposed Development will not conflict with or prevent the UK meeting its net zero GHG emissions target of 2050.

12.196 Mitigation is provided to avoid and reduce the GHG emissions, which follows the key principles of GHG mitigation in the IEMA guidance and is consistent with the requirements of relevant policy.