Appendix 4: Supplementary Documents

Revised Redline
Winter Garden Plan
Playspace Plan
Revised Principal Public Realm Areas Map
Revised Indicative Demolition and Construction Programme
Wind Microclimate Note
Jolly's Green Ecology Addendum
Climate Change Note
Revised Cumulative ZVI
Air Quality Technical Notes

1.0 CLIMATE CHANGE TECHNICAL NOTE

This Climate Change Technical Note has been prepared by Greengage Environmental Ltd on behalf of the Applicant for the Aberfeldy New Village Masterplan. It explains the changes in methodology and EIA significance set out in Chapter 9: Climate Change of the 2021 ES.

The ES chapter included:

- An assessment of the likely significant impacts of climate change on the resilience of the Proposed Development during construction and operation;
- An assessment of the likely significant impacts of the Proposed Development on the environment with regard to climate change through the direct and indirect release of greenhouse gas (GHG) emissions during construction and operation; and
- A summary of the in-combination climate change resilience impacts of the Proposed Development.

The are no changes to the policy, guidance or assessment methodology for climate change resilience or in-combination climate resilience impacts. Since the 2021 ES was submitted, IEMA have published the Second Edition of the Environmental Impact Assessment (EIA) Guide to assessing greenhouse gas (GHG) emissions[1] which supersedes the First edition of this guidance which was referenced in Chapter 9 of the 2021 ES. The implications of this are set out below.

1.1 IMPACT ASSESSMENT METHODOLOGY

The 2021 ES Chapter assessed the significance of GHG emissions from the Proposed Development relating to construction A1-A5 CO_{2e} emissions, operational energy and operational transport. The significance of these emissions was identified in comparison to current LBTH CO_2 emissions and any change in GHG emissions was identified as significant.

The 2022 IEMA Guidance on assessing GHG emissions identifies the significance criteria set out in Table 1.1 below that should be applied in an EIA context.

Table 1.1 GHG Significance Criteria

Significance	Description
Major Adverse (significant)	The project's 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. 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 following a 1.5ºC science based target.
Moderate Adverse (significant)	The project's 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. A project with moderate Adverse effects falls short of fully contributing to the UK's trajectory towards net zero following a 1.5ºC science based target.
Minor Adverse (not significant)	The project's GHG impacts would be fully consistent with applicable existing and emerging policy requirements and good practice design standards for projects of this type. A project with minor Adverse effects is fully in line with measures necessary to achieve the UK's trajectory towards net zero following a 1.5ºC science based target.
Negligible	The project's GHG impacts would be reduced through measures that go well beyond existing and emerging policy and design standards for projects of this type, such that radical decarbonisation or net zero is achieved well before 2050. 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.
Beneficial (significant)	The project's net GHG impacts are below zero and it causes a reduction in atmospheric GHG concentration, whether directly or indirectly, compared to the without-project baseline. A project with beneficial effects substantially exceeds net zero requirements with a positive climate impact.

To contextualise the Proposed Development's emissions, the 2022 IEMA guidance recommends that CO_{2e} emissions are compared to the relevant UK carbon budgets and regional sectorial carbon budgets where available. Therefore, all GHG emissions have been compared to the UK carbon budgets and operational energy CO_{2e} emissions have been compared to the recommended Greater London Energy Carbon Budgets set out by the Tyndall Centre[2]. The UK carbon budgets are in place to restrict the amount of GHG emissions the UK can legally emit in a five-year period.

The appropriate UK national carbon budgets during the anticipated construction programme of the Proposed Development are the 4th carbon budget for 2023-2027 and the 5th carbon budget for 2028-2033.

Given that the Proposed Development is likely to be fully operational from 2033 based on the indicative construction programme, the anticipated operational phase GHG impacts of the Proposed Development have been compared to the 6th carbon budget for 2033-2037.

[1] IEMA (2022); Assessing Greenhouse Gas Emissions and Evaluating their Significance, Second Edition.

[2] Tyndall Centre (2022); Setting Climate Commitments for London. https://carbonbudget.manchester.ac.uk/reports/LN/

Table 1.2 shows the future UK and regional carbon budgets up to 2033, which highlights a decline in the amount of GHG emissions that the UK can legally emit going into the future. This means that any source of emissions contributing to the UK's carbon inventory is going to have an increased impact on the UK carbon budgets in the future.

Table 1.2 UK and London Energy Carbon Budgets

Significance	Total UK Carbon budget (Mt CO_{2e})	Recommended London Energy Carbon Budget (Mt CO_2)
4th (2023 – 2027)	1,950	65.9
5th (2028 – 2033)	1,725	34.3
6th (2033 – 2037)	1,000	17.9

1.2 POTENTIAL EFEECTS

Demolition and Construction

In Chapter 9 of the 2021 ES, paragraphs 9.34-9.36 identified that the Proposed Development would have a **Moderate Adverse (significant)** impact from GHG emissions from construction and upstream processes including A1-A3 Product Stage, A4 Transportation to site and A5 Site Operations.

Mitigation for this impact was set out in paragraphs 9.49 to 9.53 of Chapter 9 and the residual impact was identified as **Minor Adverse (significant)**.

The total outline and detailed A1-A5 CO_{2e} emissions for the Proposed Development were identified as 19,560 tonnes of CO_{2e}. This is equivalent to 5.0 x 10^{-4} % of the 4th UK Carbon Budget from 2023-2027 and 5.7 x 10^{-4} % of the 5th UK Carbon Budget from 2028-2033.

Given that the proposed development meets all existing and emerging policy for minimising GHG emissions, will significantly reduce emissions compared to a Business As Usual scenario and represents a small proportion of the 4th and 5th UK carbon budgets, it is considered to be in line with the UK trajectory tc net zero.

Therefore, when considering the significance criteria set out in the new IEMA GHG Guidance, the Proposed Development is considered to have a **Minor Adverse (not significant)** effect from construction and upstream processes.

There are no changes to the mitigation set out in the 2021 ES and the residual impact remains **Minor Adverse (not significant).**

Completed Development

Operational Energy

In Chapter 9 of the 2021 ES, paragraphs 9.41-9.44 identified that the Proposed Development would have a **Moderate Adverse (significant)** impact from GHG emissions from operational energy.

Mitigation for this impact was set out in paragraphs 9.69 to 9.70 of Chapter 9 and the residual impact was identified as **Moderate Adverse (significant).**

The WLC Assessment has identified that the total WLC emissions from operational energy (B6) are predicted to be 23,092 tonnes CO_{2e} under the steady state decarbonisation scenario during the assumed 60 year operational lifetime.

A comparison of the total Proposed Development B6 energy emissions with the 6th UK Carbon budget and the recommended Greater London Energy Carbon budget are set out in Table 1.3 below.

Table 1.3 Operational Energy (B6) CO_{2e} emissions in comparison to Carbon Budgets

Measure	Quantum
Total tonnes CO_{2e} emissions for 2033-2037	3,018 tonnes
Percentage (%) of UK Sixth Carbon Budget	3.0 x 10^{-4} %
Percentage (%) of recommended Sixth Greater London Energy Budget	0.017%

*Note: * based on proposed energy consumption, BEIS (2021) emission factor of 0.203 kg CO_2/ kWh for gas and National Grid CO_{2e} emission factors under steady state progression scenario for 2033-2037 for electricity.*

When considering the significance criteria set out in the new IEMA GHG Guidance, the Proposed Development is considered to have a **Moderate Adverse (significant)** effect from operational energy given that the proposed Energy Strategy meets most of the local and regional policy requirements but is not considered to be sufficiently ambitious to be in line with the UK net zero trajectory.

There are no changes to the mitigation set out in the 2021 ES and the residual impact remains **Moderate Adverse (significant).**

Operational Transport

In Chapter 9 of the 2021 ES, paragraphs 9.34-9.36 identified that the Proposed Development would have a **Negligible (not significant)** to **Minor Beneficial (significant)** impact from GHG emissions from operational transport as the transport consultants, Velocity, have identified that the Proposed Development will have a net decrease in vehicle trips compared to the existing Site as a result of the proposed low residential parking ratio. Velocity have undertaken strategic modelling which assumed that there would be no change in traffic volume on the strategic network due to the Proposed Development and the only impact is the change to the network in the form of closing the underpass.

Mitigation for this impact was set out in paragraphs 9.71 to 9.72 of Chapter 9 and the residual impact was identified as **Negligible (not significant)** to **Minor Beneficial (significant).**

Therefore, when considering the significance criteria set out in the new IEMA GHG Guidance, the Proposed Development is considered to have a **Negligible (not significant)** to **Beneficial (significant)** impact.

There are no changes to the mitigation set out in the 2021 ES and the residual impact remains **Negligible (not significant)** to **Beneficial (significant)**.

1.3 RESIDUAL EFFECTS

In summary the updated residual GHG effects are as follows:

- **Minor Adverse (not significant)** effect resulting from construction emissions at the national level;
- **Moderate Adverse (significant)** effect resulting from operational energy emissions at a national level; and
- **Negligible** to **Beneficial (significant)** effect resulting from future operational transport emissions at a national level.

No new likely significant adverse effects are predicted as a result of the updated IEMA GHG Guidance and there are no changes to the significance of other effects described in Chapter 9: Climate Change.