

Technical note

Cambridge Halls

March 2026

Cambridge Halls - Climate Change ES Chapter update

Introduction

1. This climate change ES chapter update has been prepared by Turley Sustainability & ESG to provide an update on the operational Greenhouse Gas (GHG) emissions of Cambridge Halls development ('Proposed Development') due to the proposed changes to the Energy Strategy for the Proposed Development.
2. The following sections provide the assessment of the Proposed Development's operational GHG emissions, based on the updated Energy Strategy and modelling as set out within the 'TM54 Operational Energy Assessment Stage 4' report prepared by Waterman (January 2026).
3. The following changes to the Energy Strategy have been implemented:
 - ASHP for domestic hot water only;
 - Space heating to be provided by electric panel heaters;
 - On site PV will increase;
 - Energy Use Intensity (EUI) will increase from 47.4 kWh/m²/yr to 72.25 kWh/m²/year for Phase 1, and from 41.8 kWh/m²/yr to 70.26 kWh/m²/year for Phase 2.
4. In this context, the Proposed Development's operational GHG emissions need to be recalculated based on the updated energy modelling results, and the Proposed Development's contribution to the UK's net zero trajectory re-evaluated in order to confirm the conclusions of the ES.
5. An updated baseline, where this has changed, is also provided.
6. The assessment of GHG emissions is undertaken in accordance with ISEP's guidance '*Assessing Greenhouse Gas Emissions and Evaluating their Significance*'¹ (GHG Assessment guidance).

¹ EIA Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance (ISEP (Formerly IEMA), 2022). Available at: https://www.iema.net/media/xmgpooopk/2022_iema_greenhouse_gas_guidance_eia.pdf

Baseline Conditions

Local and Regional GHG Emissions

7. **Table 1** presents the most recent (2023) data on baseline GHG emissions for the MCC administrative area and North West of England as sourced from Government's UK Local Authority & Regional CO₂ Emissions Statistics². Assumed baseline GHG emissions from the Site are also presented. This baseline data is used to contextualise GHG emissions from the Proposed Development and determine the magnitude of change.

Table 1: Baseline Local & Regional GHG Emissions

Geographical Area	2023 GHG Emissions (tonnes CO ₂ e)
The Site	0
MCC	2,188,790
North West	38,976,983

Future Baseline

8. Future baseline in terms of UK Carbon budgets has remained unchanged. Manchester carbon budgets proposed by Tyndall Centre have now been withdrawn and will not form part of the future baseline for this assessment.

Contribution to UK Net Zero Trajectory

9. In order to determine whether the Proposed Development is aligned with and makes an appropriate contribution to the UK's net zero trajectory, it is necessary to provide context for the magnitude of GHG emissions.
10. The RIBA 2030 Climate Challenge³ provides a range of good and best practice operational energy targets for buildings to ensure the construction industry delivers the significant reductions necessary to have a realistic prospect of achieving net zero by 2050.
11. **Table 2** sets out RIBA 2030 targets for operational energy for new residential buildings.

Table 2: RIBA 2030 operational energy targets

	Business as Usual (BAU)	2025 Targets	2030 Targets
Operational Energy use Intensity (EUI) targets (kWh/m ² /yr)	120	<60	<35

² BEIS (2025). UK Local Authority and Regional Carbon Dioxide Emissions National Statistics: 2005 to 2023. Available at: <https://www.gov.uk/government/collections/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics>

³ RIBA 2030 Climate Challenge. Available at: <https://www.architecture.com/about/policy/climate-action/2030-climate-challenge>

Assessment of Effects, Secondary Mitigation and Residual Effects

Operational Stage

GHG Emissions

12. GHG emissions from the operation of the Proposed Development are calculated based on the annual Energy Use Intensity (EUI) of 72.25 kWh/m²/yr for Phase 1 and 70.26 kWh/m²/yr for Phase 2 as set out within the 'TM54 Operational Energy Assessment Stage 4' report prepared by Waterman. The UK electricity grid factors published by the Department for Energy Security and Net Zero (DESNZ, November 2023)⁴ (commercial, consumption-based) which reflect the continued decarbonisation of the UK electricity grid from the ongoing uptake of renewables (especially offshore wind) and closure of coal-fired power stations are also utilised.
13. **Table 3** presents estimated operational GHG emissions for the first year of assumed operation (2030), for the last year of the assessed period (2042) as well as emissions over the assessed operational period (2030 – 2042). As the assessment uses UK electricity grid factors which reflect the continued decarbonisation of the UK electricity grid, operational GHG emissions are anticipated to reduce over time, with emissions in year 1 of operations representing the peak/worst-case.

Table 3: Operational Stage GHG Emissions

Operational Stage GHG Emissions (tCO ₂ e)	
Year 1 (2030)	231
Year 13 (2042)	66
Total (2030 -2042)	1,433

14. The Proposed Development is estimated to result in GHG emissions of 231 tCO₂e during the first year of operation (2030), dropping to 66 tCO₂e in 2042, and accumulating to 1,433 tCO₂e across the assessed operational stage (2030 – 2042).
15. **Table 4** reports the above operational stage emissions as a proportion of baseline (2023) emissions from MCC and North West, and also UK carbon budgets. Peak annual operational GHG emissions are compared with baseline emissions (given these are also annual data), whilst total operational GHG emissions are compared with UK carbon budgets for the same 2030 – 2042 period.

Table 4: Contextualised Operational Stage GHG Emissions

Context	Operational Stage GHG Emissions (as a %)
Baseline emissions	
MCC	0.011%
North West England	<0.001%

⁴ Electricity emissions factors to 2100 kgCO₂e/kWh, DESNZ (2023) Available at: [UK electricity grid factors](#)

Context	Operational Stage GHG Emissions (as a %)
Carbon Budgets	
UK 5 th Carbon Budget (2028 – 2032)	<0.001%
UK 6 th Carbon Budget (2033 – 2037)	<0.001%
UK 7 th Carbon Budget (2038 – 2042)	<0.001%

16. Peak annual operational emissions of 231 tCO₂e equate to circa 0.011% of MCC and less than 0.001% of the North West baseline emissions. Total operational emissions for the assessed period (2030 – 2042) of 1,433 tCO₂e equate to less than 0.001% of UK carbon budgets for the same period.
17. **Table 5** presents operational EUI for the Proposed Development within the context of RIBA climate challenge targets for operational energy. Please note that although there are other proposed uses within the buildings such as commercial and community uses, as the residential use will be the predominant use of the Proposed Development, it has been assumed that the buildings will be constructed to comply with the residential use benchmark.

Table 5: Benchmark Context

	RIBA 2030 Climate Challenge – Business as Usual	Proposed Development Phase 1	Proposed Development Phase 2
Operational Energy use Intensity (EUI) (kWh/m ² /yr)	120	72.3	70.3

18. The Proposed Development represents an improvement over RIBA BAU residential operational energy target. In addition, the Proposed Development will achieve 'Excellent' rating under BREEAM New Construction V6.1 *ENE01 Prediction of operational energy consumption* credits in line with the requirements of the local plan 'Places for Everyone'. This performance is considered to make an appropriate contribution to the UK net zero trajectory through the provision of good practice mitigation.
19. The sensitivity of the Global Climate System is considered to be high. The magnitude of change is considered to be negligible. Therefore, there is likely to be a direct, temporary, long-term, adverse effect which is considered to be **minor**.
20. No secondary mitigation or enhancement is required.
21. In the absence of secondary mitigation the residual effect is the same as that reported within the pre-mitigation scenario. This effect is considered to be **Not Significant**.
22. In this context, the conclusions of the ES remain unchanged.