

Memorandum

Riverpark Road GMCA Energy and Carbon Proforma Summary

Project Address:	Former Riverpark Trading Estate, Riverpark Road, Manchester, M40 2XR
LPA Reference:	142464/FO/2025
Ensphere Reference:	24-E088-011
Date:	22 July 2025
Circulation:	Manchester City Council Kellen Homes Limited Euan Kellie Property Solutions Limited

Objective

To outline how the proposed development intends to align the GMCA Net Zero guidance documents and supporting proforma.

Background

An application was validated by the Council in April 2025, pertaining to the *erection of a residential development comprising 498 dwellings (Use Class C3a) together with landscaping, sustainable drainage features, pedestrian footways, vehicular accesses and highways, parking provision and other associated works*. Ensphere produced an Energy Statement to accompany the planning application at the above site.

In March 2025, Greater Manchester Combined Authority (GMCA), published three Net Zero guidance documents and a supporting proforma to support the implementation of the adopted policies in the Places for Everyone Joint Development Plan and Mayoral commitment to deliver Truly Affordable Net Zero (TANZ) homes. The 'Energy and Low Carbon Proforma' has subsequently been completed and submitted as part of the planning application, with this memorandum providing further information in regards to the energy strategy and approach to compliance.

Policy Context

The Places for Everyone (PfE) Plan took effect and became part of the statutory development plan for each of the nine PfE authorities in March 2024. As discussed above, additional guidance to support the plan was produced the subsequent year.

The Net Zero design guidance, including the planning submission guidance document, focuses on meeting the expectations and intent of policy JP-S2 sections (2) and (5), JP-S3 section (2), as well as linking to Truly Affordable Net Zero (TANZ) requirements. The applicable sections of these policies can be summarised as follows:

Policy JP-S1 (Sustainable Development)

Table 5.1. of Policy JP-S1 is referenced under policy JP-S2 section (5), whereby paragraph 5.17 states:

"Therefore where planning applications for residential development are accompanied by an energy statement, the following best practice thresholds should be seen as the starting point in relation to reducing energy demand and onsite renewable energy generation. The thresholds set out in Table 5.1, for post 2025, are consistent with the GM Five Year Environment Plan.

Table 5.1 Best Practice Thresholds for Reducing Energy Demand and Onsite Renewable Energy Generation within residential developments

Phase	Space Heat Demand ²⁵	Hot Water Energy Demand ²⁶	Renewable Energy Generation Targets
2021 - 2025	Houses (30kWh/m ²) Flats (25kWh/m ²)	20% energy demand reduction in the total heat required for water heating	Photovoltaic installation: 20% ground floorspace
2025 - onwards	Houses (20kWh/m ²) Flats (15kWh/m ²)	^20% energy demand reduction in the total heat required for water heating	*Photovoltaic installation: 40% ground floorspace

**Ground floorspace used as a proxy for available roof area.*

^will need to be reviewed with Future Homes Standard 2025 to determine if savings already embedded.

²⁵As calculated within SAP 10.2, Space Heating Requirement (Box99 or equivalent at later SAP versions). It does not take into account the efficiency of the space heating system. It is based on a fabric first approach (insulation and airtightness).

²⁶Reduction in expected DHW grid energy demand compared to the Part L concurrent notional building. Takes into account the efficiency of the domestic hot water generating system, on-site energy generation and direct use, and any other passive hot water energy recovery systems installed, as shown in Calculation Reference 62 in SAP10.2.

“

Policy JP-S2 (Carbon and Energy)

The measures of Policy JP-S2 section (2) and (5) include:

“2. Promoting the use of life cycle cost and carbon assessment tools to ensure the long-term impacts from development can be captured”

“5. An expectation that new development will, unless it can be demonstrated that it is not practicable or financially viable:

a. Be net zero carbon which applies:

- from adoption – to regulated operational carbon emissions;
- from 2028 – to all emissions ‘in construction’.

From 2025 development should also calculate and minimise carbon emissions from unregulated emissions alongside regulated emissions.

Development proposals should set out how this has been achieved in an energy statement in accordance with the energy hierarchy [...].

From 2025 any residual carbon emissions that cannot be fully mitigated on-site should be offset, in agreement with the relevant local planning authority through a financial contribution to a carbon offset fund.

As an interim measure, development should be consistent with the 2022 Part L Building Regulations unless superseded by changes to building regulations and/or national or local planning policies.

[...]

- c. Where practicable, prioritise connection to a renewable energy/heating/cooling network in the first instance or a low carbon energy/heating/cooling network that is adaptable to non-fossil fuels at a later date;
- d. In residential developments, achieve energy demand reductions in terms of space heat demand; hot water energy demand and the delivery of on-site renewable energy generation, in accordance with Table 5.1.

For renewable energy generation priority should be given to PV installation where technically feasible, alternative technologies will be appropriate where the equivalent generation is evidenced.

- f. Include a detailed energy statement to demonstrate via site relevant evidence how the development has sought to maximize reductions in carbon emissions in line with relevant policy targets, including the minimisation of overheating risks and appropriate measures for post occupancy evaluation. Whole life cycle emissions should be considered where possible.

Districts may set out specific carbon emission reduction and energy demand targets within Local Plans."

Policy JP-S3 (Heat and Energy Networks)

Section (2) explains:

"2. Within the identified "Heat and Energy Network Opportunity Areas", unless it can be demonstrated that there are more effective alternatives for minimising carbon emissions or such connection is not practicable or financially viable, it is expected that:

- a. New residential developments that are '10 dwellings or more' or other developments over 1,000 m² floorspace shall:*
 - i. Connect to an existing or planned heat/energy network or be designed to enable future connection (where within 500m of such a network); and/or*
 - ii. Install a site-wide or communal heat/energy network solution.*

[...]"

Compliance and Viability/Technical Considerations

1) Minimise Energy Demand

Space heating demand has been calculated based on SAP 10.2 compliance modelling for indicative sample units. Testing of a range of unit types using SAP 10.2 has shown most flatted accommodation units comfortably achieve the "2025-onwards" target of 15kWh/m². For the houses, an increased space heating demand target is referenced of 20 kWh/m² for "2025-onwards". Based on the houses modelled, space heating demand is indicated as slightly higher than this target, although it is noted as still within the "2021 – 2025" target range.

The measured form factor for the flats modelled at this stage is lower than the target and thus indicates a higher energy efficiency of the building. Whilst the U-values and air permeability rate proposed are marginally higher than the targeted values, these have been considered as part of wider discussions surrounding overheating risk, embodied carbon and viability constraints, and are still towards the top end of performance.

2) Maximise Energy Efficiency

This requirement relates to the building's total energy use (regulated and unregulated), which should be met through low carbon and energy efficient heating systems. The net zero guidance requires an Energy Use Intensity (EUI) of ≤ 35 kWh/m²GIA/yr for all TANZ homes.

An assessment of the buildings using predictive energy modelling was not available at this stage, and thus the regulated energy use has been assumed from Part L SAP modelling, with unregulated separately calculated using SAP10.2 methodology. This indicates values in excess of the ≤ 35 kWh/m²GIA/yr target. It is noted that this target aligns with that of the 'Low Energy Transformation Initiative' (LETI) and has been derived from predicted energy use modelling for 'best-practice' or 'optimised' EUIs, which indicate the lowest energy demand for each archetype which LETI considers to be realistically achievable. Whilst efforts will be made to maximise energy efficiency potential, it is noted that particularly in the context of this site, this needs to be balanced with deliverability considerations.

3) Use Renewable Energy

In terms of PV provision, there is a target for the area of the array to equal over 40% ground floorspace. It is proposed to maximise roof mounted PV on site, which is anticipated to be more suitable for the houses, as well as the landlord spaces of the apartment buildings. Details of PV specification will be confirmed in due course as the design develops, however density will be maximised where possible, subject to access and maintenance requirements. The efficiency of the PV system, battery storage requirements as well as shading constraints will also be considered by the PV specialist once appointed.

4) Use Low Carbon Energy

In terms of heat networks, it was not considered a suitable strategy as the site is not within 500m of a low carbon network or in an opportunity area (Case 4). Instead, and in line with the GMCA Low Carbon Heat Guidance for Case 4, the best heating option in order to deliver low carbon heat which is affordable to residents and cost effective has been selected.

Low and zero carbon technologies have been reviewed as part of the Energy Statement, with the proposed solution considered most suitable for the scheme when balancing operational requirements, build costs and environmental performance. An all-electric heating strategy is proposed for the apartments, with a heat pump also used on hot water in the houses.

5) Reduce Overheating Risk

A Thermal Comfort Analysis has been undertaken by Ensphere to support the development of the design and ensure the proposals are able maintain a thermally comfortable environment for the building's occupants. Thermal comfort was assessed in accordance with CIBSE TM59:2017 (Design Methodology for the Assessment of Overheating Risk in Homes) and the Approved Document Part O for the occupied spaces within the blocks of flats (Blocks A-E). Whilst the latest GMCA Submission Guidance asks if the overheating assessment been carried out using DSY 2/3 weather files, this guidance was not available at the time of writing for the Thermal Comfort Analysis and as such, the CIBSE weather files used included a current weather scenario as well as future scenario for 2050.

- Design Summer Year 1 for the 2020s, high emissions, 50% percentile scenario (Manchester_DSY1_2020High50).
- Future weather scenario: Design Summer Year 1 for the 2050s, high emissions, 50% percentile scenario (Manchester_DSY1_2050High50).

It is worth noting that the site is subject to acoustic limitations, as identified in the Noise Impact Assessment – Riverpark Road, Manchester (Ref: 51-086-R1-2, October 2024), which was relevant to the appraisal of potential overheating mitigation measures.

Based on the indicative early-stage modelling and considering the currently understood acoustic, security and safety restrictions, natural ventilation used in conjunction with mechanical ventilation was deemed to be sufficient to maintain thermal comfort levels under the current weather scenario. However, as a result of climate change, the UK is expected to experience warmer weather, and it was therefore found that comfort cooling would likely be needed in most spaces in the future.

6) Minimise Embodied Carbon

Embodied carbon emissions were considered as part of the Environmental Statement Climate Change technical chapter produced by Hilson Moran. This assessed lifecycle embodied carbon to be 3,890 kgCO₂/m²GIA and upfront emissions at 1,030 kgCO₂/m²GIA. Whilst these figures are in excess of the GMCA targeted emissions in regards to embodied carbon, the calculation methodology represents an early-stage assessment based on available information and industry benchmarks.

It is proposed that the Applicant will review the potential extent of savings for different material options when deciding specific sourcing and the associated supply chain. Material replacement and refurbishment emissions also typically represent a significant quantum of whole life carbon emissions and thus may be feasible to identify more resilient materials products with longer lifespans.

7) Offsets

It is noted that carbon offset calculation is not yet available. Whilst the Applicant is minded to minimise environmental impact as far as feasible, any payment would need to be considerate of viability concerns.

Conclusion

The Applicant has considered the GMCA Net Zero guidance documents and has sought to align with the targets in the supporting proforma where technically feasible and financially viable. It is noted that the targets stated largely represent industry best practice and thus can be viewed as more difficult to achieve relative to a typical construction project. A balance has therefore been sought between the energy and carbon performance of the proposed development, as well as other benefits of the scheme, such as the mix of housing types and affordability offerings.

Appendix

An extract from the completed GMCA 'Energy and Carbon Proforma' is provided below for reference.

Energy and Carbon Proforma Residential

Major development (+10 homes)

Version 1.0

Project Name: Riverpark Road

Application ref: 142464/FD/2025

Date: 22/07/2025

GMCA GREATER MANCHESTER COMBINED AUTHORITY

Ref. name	Block A 58	Block B 46	Block C 69	Block D 58	Block E 46	House - Acacia	House - Cedar	House - Emerson	House - Hickory	Whole Development	
No. dwellings											
Area (m ² GIA)	4,461	3,523	5,556	4,561	3,883	89	89	101	73	42,784	
Target values	Building 1	Building 2	Building 3	Building 4	Building 5	Building 6	Building 7	Building 8	Building 9	Building 10	*
Minimise energy demand											
Space heating demand (kWh/m ² GIA/yr)	≤ 15 (19/05) ≤ 20 (1/06/2021)	9.022751	5.189314	5.005366	14.19254	10.70894	26.1845	25.4911	24.68526	27.04079	
Calculation methodology used to calculate space heating demand and confirmation that this covers all homes/blocks	Predictive energy model	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	
Form factor per building	≤ 2	0.78653493	0.81038887	1	0.70401228	0.72443987	1.53685333	1.5647191	1.52277228	1.6339726	
Average external wall U-value (W/m ² K)	≤ 0.15	0.16	0.16	0.16	0.21	0.21	0.19	0.19	0.19	0.19	
Average window U-value (W/m ² K)	≤ 1 (triple)	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
Air permeability rate (m ³ /h/m ² @ 50 Pa)	≤ 1	3	3	3	3	3	4	4	4	4	
Maximise energy efficiency											
Energy use intensity (kWh/m ² GIA/yr)	≤ 35	76.54116	81.44023	98.79303	105.5219	76.34271	85.5061	86.83722	82.85473	115.81	
Calculation methodology used to calculate energy use intensity and confirmation that this covers all homes/blocks	Predictive energy model	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	SAP Indicative Sample Unit	
Use renewable energy											
PV footprint area (% of ground floor space)	≥ 40	6	7	6	5	6	11	11	10	14	
Annual renewable energy generation (kWh/m ² building footprint/yr)	-	1.73793646	1.88692819	1.59546004	0.97232844	1.14117126	15.7198191	7.49340449	6.32605941	18.271589	
Renewable energy balance (%)	-	2.2730208	2.3163485	1.61495205	0.92144702	1.4948005	18.3844419	8.62325422	8.35928067	15.7772171	
Total energy used (kWh/yr)	-	341450.108	286313.33	548894.067	481285.404	236438.756	7610.0428	7728.5126	8368.3277	8454.1272	
Total energy generated on-site (kWh/yr)	-	7761.232	6647.648	8864.376	4434.73	4431.168	1339.0639	666.913	639.532	1333.626	
Use low carbon energy											
Fossil fuel free (yes/no)	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	
Heat source	Electric	Electric	Electric	Electric	Electric	Electric	Electric/Gas	Electric/Gas	Electric/Gas	Electric/Gas	
Low Carbon Heat Appraisal completed	Yes	See energy suggestion	See energy suggestion	See energy suggestion	See energy suggestion	See energy suggestion	See energy suggestion	See energy suggestion	See energy suggestion	See energy suggestion	
Heat network suitability	-	Considered	Considered	Considered	Considered	Considered	Considered	Considered	Considered	Considered	
Exemption requested	-	No	No	No	No	No	No	No	No	No	
Efficiency of heating system (SCOP)	≥ 1.5	Space: 1.0	Water: 2.5	Water: 2.5	Water: 2.5	Water: 2.5	Water: 2.5	Water: 2.5	Water: 2.5	Water: 2.5	
Carbon content of heat (gCO ₂ /kWh)	≤ 100	0 to 100	0 to 100	0 to 100	0 to 100	0 to 100	0 to 220	0 to 220	0 to 220	0 to 220	< based on GMCA 1.0
Reduce overheating risk											
Have Part O overheating requirements been met without the use of mechanical cooling?	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	-	
If no, how many homes are cooled?	Yes	-	-	-	-	-	-	-	-	-	
Has a CIBSE TM59 assessment been carried out using DSY2 and DSY3 weather files? Have any additional passive measures been included as a result?	Yes	DSY2 and DSY3 not modelled but	DSY2 and DSY3 not modelled but	DSY2 and DSY3 not modelled but	DSY2 and DSY3 not modelled but	DSY2 and DSY3 not modelled but	DSY2 and DSY3 not modelled but	DSY2 and DSY3 not modelled but	DSY2 and DSY3 not modelled but	DSY2 and DSY3 not modelled but	
Minimise embodied carbon											
Upfront embodied carbon (kgCO ₂ e/m ² GIA)	≤ 500-600	1030.385	1030.385	1030.385	1030.385	1030.385	1030.385	1030.385	1030.385	1030.385	
List top three materials with the highest upfront embodied carbon emissions (kgCO ₂ e/m ² GIA):	-	Material 1	Material 1	Material 1	Material 1	Material 1	Material 1	Material 1	Material 1	Material 1	
Material 2	-	Material 2	Material 2	Material 2	Material 2	Material 2	Material 2	Material 2	Material 2	Material 2	
Material 3	-	Material 3	Material 3	Material 3	Material 3	Material 3	Material 3	Material 3	Material 3	Material 3	
Lifecycle embodied carbon (kgCO ₂ e/m ² GIA) - for large major developments only	-	3.890	3890.37958	3890.37958	3890.37958	3890.37958	3890.37958	3890.37958	3890.37958	3890.37958	< Based on calculation for the whole development - see ES Chapter
Offsets											
Offset contribution (£)	-	-	-	-	-	-	-	-	-	-	

Figure 1 – Screenshot of the completed GMCA 'Energy and Carbon Proforma' for Riverpark Road