

# Energy and Carbon Proforma

## Introduction

Version 2.0

### What is the Energy and Carbon Proforma

The Energy and Carbon Proforma is a tool to summarise the energy and carbon performance of a project. It requires information to be completed on the themes listed in the Energy and Carbon Framework.

### Why the Energy and Carbon Proforma is important

The energy and carbon proforma eases communication between applicants and planning officers, helping to determine if the full potential of a project from an energy and carbon perspective has been reached. If it has not, the proforma helps to easily identify where the development could be improved. Focusing on design solutions alleviates the financial pressure of costly solutions, encouraging the viability of developments without

### Content of the Energy and Carbon Proforma

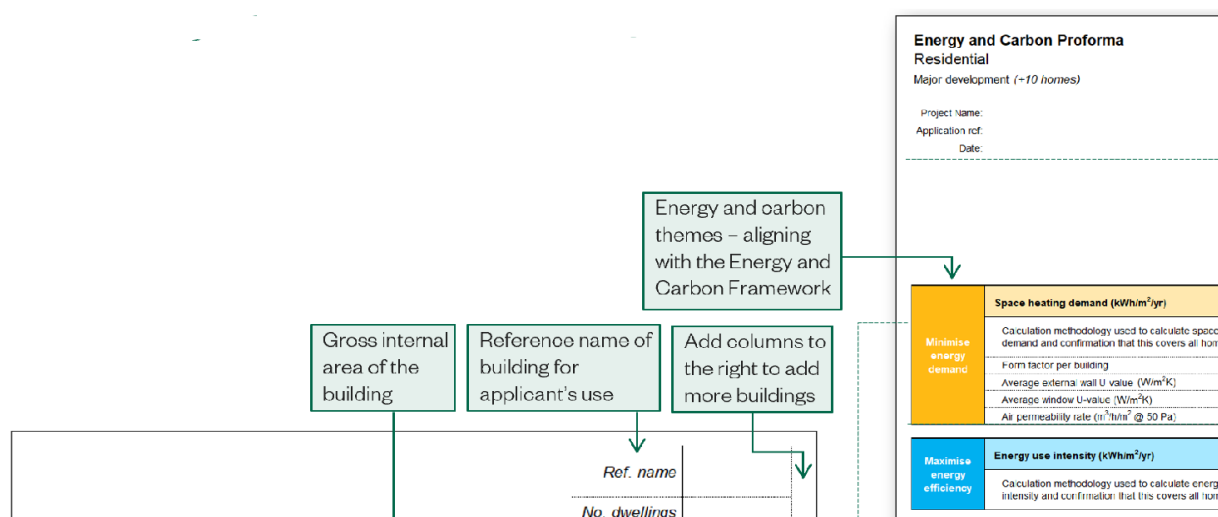
There are six Energy and Carbon Proformas: three for residential developments and three for non-residential developments. The level of information required varies depending on type and size of development, but the overall structure remains the same, requiring data across the following themes:

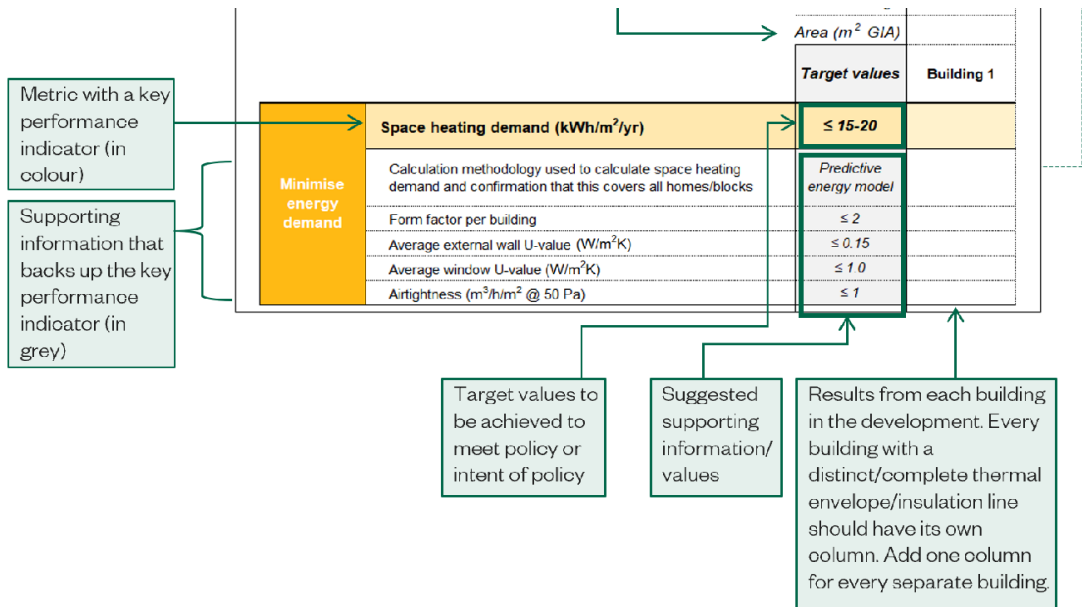
- Minimise energy demand
- Maximising energy efficiency (omitted for small minor development)
- Use renewable energy
- Use low carbon energy
- Reduce overheating risk
- Minimise embodied carbon
- Offsets (omitted for small minor development)

### Energy and Carbon Proforma quick-start

Refer to the accompanying Submissions Guidance for further information.

The below explains how the Energy and Carbon Proforma is set out.





|                          |                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Use renewable energy     | PV footprint area (% of ground floor space)                                                                                      |
|                          | Annual renewable energy generation (kWh/m <sup>2</sup> built footprint/yr)                                                       |
|                          | Renewable energy balance (%)                                                                                                     |
|                          | Total energy used (kWh/yr)                                                                                                       |
|                          | Total energy generated on-site (kWh/yr)                                                                                          |
| Use low carbon energy    | Fossil fuel free (yes/no)                                                                                                        |
|                          | Heat source                                                                                                                      |
|                          | Low Carbon Heat Appraisal completed                                                                                              |
|                          | Heat network suitability                                                                                                         |
|                          | Exemption requested                                                                                                              |
| Reduce overheating risk  | Have Part O overheating requirements been met?                                                                                   |
|                          | If no, how many homes are cooled?                                                                                                |
|                          | Has a CBSE TMSA assessment been carried out and DSY3 weather files? Have any additional past measures been included as a result? |
|                          |                                                                                                                                  |
| Minimise embodied carbon | Upfront embodied carbon (kgCO <sub>2</sub> e/m <sup>2</sup> GIA)                                                                 |
|                          | List top three materials with the highest upfront embodied carbon emissions (kgCO <sub>2</sub> e/m <sup>2</sup> GIA): Material 1 |
|                          | Material 2                                                                                                                       |
|                          | Material 3                                                                                                                       |
|                          | Lifecycle embodied carbon (kgCO <sub>2</sub> e/m <sup>2</sup> GIA) - for major developments only                                 |
| Offsets                  | Offset contribution (£)                                                                                                          |

GMCA

GREATER  
MANCHESTER  
COMBINED  
AUTHORITY

|                       |                            |            |
|-----------------------|----------------------------|------------|
|                       | Ref name                   |            |
|                       | No. dwellings              |            |
|                       | Area (m <sup>2</sup> GIA)  |            |
|                       | Target values              | Building 1 |
|                       | ≤ 15 (flats)               |            |
|                       | ≤ 20 (houses)              |            |
| heating<br>res/blocks | Predictive<br>energy model |            |
|                       | ≤ 2                        |            |
|                       | ≤ 0.15                     |            |
|                       | ≤ 1.0                      |            |
|                       | ≤ 1                        |            |
|                       | ≤ 35                       |            |
| y use<br>res/blocks   | Predictive<br>energy model |            |

|                     |           |  |
|---------------------|-----------|--|
|                     | ≥ 40      |  |
| ilding              | -         |  |
|                     | -         |  |
|                     | -         |  |
|                     | -         |  |
|                     | Yes       |  |
|                     | Electric  |  |
|                     | Yes       |  |
|                     | -         |  |
|                     | -         |  |
|                     | ≥ 3.5     |  |
|                     | ≤ 100     |  |
| met without         | Yes       |  |
|                     | Yes       |  |
| using USY2<br>isive | Yes       |  |
|                     |           |  |
|                     | ≤ 500-600 |  |
| mbodied             | -         |  |
|                     | -         |  |
|                     | -         |  |
| or large            | -         |  |
|                     | -         |  |
|                     | -         |  |

# Energy and Carbon Proforma

## Residential

Minor development (2-9 homes)  
Version 2.0



Project Name:  
Application ref:  
Date:

|                              |
|------------------------------|
| <b>Affordable dwellings?</b> |
| No                           |

|                            |                                                                                                                          |                                         |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
|                            |                                                                                                                          | Building ref. name                      |
|                            |                                                                                                                          | Area (m <sup>2</sup> GIA)               |
|                            |                                                                                                                          | No. dwellings (per building)            |
|                            |                                                                                                                          | No. affordable dwellings (per building) |
|                            |                                                                                                                          | <b>Target values</b>                    |
| Minimise energy demand     | Space heating demand (kWh/m <sup>2</sup> GIA/yr)                                                                         | ≤ 15 (flats) - 20 (houses)              |
|                            | Calculation methodology used to calculate space heating demand and confirmation that this covers all homes/blocks        | Predictive energy model                 |
|                            | Form factor per building                                                                                                 | ≤ 2                                     |
|                            | Average external wall U-value (W/m <sup>2</sup> K)                                                                       | ≤ 0.15                                  |
|                            | Average window U-value (W/m <sup>2</sup> K)                                                                              | ≤ 1 (triple)                            |
|                            | Air permeability rate (m <sup>3</sup> /h/m <sup>2</sup> @ 50 Pa)                                                         | ≤ 1                                     |
| Maximise energy efficiency | Energy use intensity (kWh/m <sup>2</sup> GIA/yr)<br><i>renewables should not be accounted for in the EUI calculation</i> | ≤ 35                                    |
|                            | Calculation methodology used to calculate energy use intensity and confirmation that this covers all homes/blocks        | Predictive energy model                 |
| Use renewable energy       | PV footprint area (% of ground floor space)                                                                              | ≥ 40                                    |
|                            | Annual renewable energy generation (kWh/m <sup>2</sup> building footprint/yr)                                            | -                                       |
|                            | Renewable energy balance (%)                                                                                             | -                                       |
|                            | Total energy used (kWh/yr)                                                                                               | -                                       |
|                            | Total energy generated on-site (kWh/yr)                                                                                  | -                                       |

|                          |                                                                                                                                                                                          |          |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Use low carbon energy    | Fossil fuel free (yes/no)                                                                                                                                                                | Yes      |
|                          | Heating heat source - <i>Where the system for generating space heating is a heat pump and it achieves a SCOP of 3.5 or higher (then a Low Carbon Heat Appraisal not required)</i>        | Electric |
|                          | Domestic Hot Water heat source - <i>Where the system for generating hot water is a heat pump and it achieves a SCOP of 3.5 or higher (then a Low Carbon Heat Appraisal not required)</i> | Electric |
|                          |                                                                                                                                                                                          |          |
| Reduce overheating risk  | Have Part O overheating requirements been met without the use of mechanical cooling?                                                                                                     | Yes      |
|                          |                                                                                                                                                                                          |          |
| Minimise embodied carbon | Confirmation that a summary of the efforts made to design a lean, low carbon structure and building design has been submitted?                                                           | Yes      |

| Summary sitewide reporting table    |                                                               |                                                        |                                        |
|-------------------------------------|---------------------------------------------------------------|--------------------------------------------------------|----------------------------------------|
| No. of resi<br>buildings on<br>site | Total resi<br>building<br>footprint area<br>(m <sup>2</sup> ) | Total on-site<br>PV area for resi<br>(m <sup>2</sup> ) | Sitewide PV<br>footprint area<br>(%fp) |
|                                     |                                                               |                                                        |                                        |

|            |            |                                |                                |            |                                |            |
|------------|------------|--------------------------------|--------------------------------|------------|--------------------------------|------------|
|            |            |                                |                                |            |                                |            |
|            |            |                                |                                |            |                                |            |
|            |            |                                |                                |            |                                |            |
|            |            |                                |                                |            |                                |            |
| Building 1 | Building 2 | Building 3                     | Building 4                     | Building 5 | Building 6                     | Building 7 |
|            |            | 160.4                          | 130.8                          |            | 94.3                           |            |
|            |            | SAP<br>Conversion<br>Tool V2.3 | SAP<br>Conversion<br>Tool V2.3 |            | SAP<br>Conversion<br>Tool V2.3 |            |
|            |            | 2.56                           | 2.43                           |            | 1.52                           |            |
|            |            | 0.24                           | 0.23                           |            | 0.24                           |            |
|            |            | 2.4                            | 2.4                            |            | 2.4                            |            |
|            |            | 8                              | 8                              |            | 8                              |            |
|            |            | 171.2                          | 151.6                          |            | 118.2                          |            |
|            |            | SAP<br>Conversion<br>Tool V2.3 | SAP<br>Conversion<br>Tool V2.3 |            | SAP<br>Conversion<br>Tool V2.3 |            |
|            |            | 0                              | 0                              |            | 0                              |            |
|            |            | 0                              | 0                              |            | 0                              |            |
|            |            | 8.12                           | 14.6                           |            | 12.04                          |            |
|            |            | 10477.74                       | 4455.97                        |            | 3962.26                        |            |
|            |            | 926.13                         | 764.31                         |            | 542.47                         |            |

|  |  |               |               |  |               |  |
|--|--|---------------|---------------|--|---------------|--|
|  |  | Yes           | Yes           |  | Yes           |  |
|  |  | Electric      | Electric      |  | Electric      |  |
|  |  | ASHP Cylinder | ASHP Cylinder |  | ASHP Cylinder |  |
|  |  |               |               |  |               |  |
|  |  | N/A           | N/A           |  | N/A           |  |
|  |  |               |               |  |               |  |
|  |  | Yes           | Yes           |  | Yes           |  |

| Building 8 | Building 9                     |
|------------|--------------------------------|
|            | 141.7                          |
|            | SAP<br>Conversion<br>Tool V2.3 |
|            | 2.59                           |
|            | 0.25                           |
|            | 2.4                            |
|            | 8                              |

|  |                                |
|--|--------------------------------|
|  | 153.4                          |
|  | SAP<br>Conversion<br>Tool V2.3 |

|  |         |
|--|---------|
|  | 0       |
|  | 0       |
|  | 6.35    |
|  | 9069.18 |
|  | 615.01  |

|  |
|--|
|  |
|--|

|  |               |
|--|---------------|
|  | Yes           |
|  | Electric      |
|  | ASHP Cylinder |

|  |     |
|--|-----|
|  | N/A |
|--|-----|

|  |     |
|--|-----|
|  | Yes |
|--|-----|