

Best practice guidance for major development

1. To comply with Policy CP1 of the Core Strategy, proposals must demonstrate that durable and adaptable buildings are to be delivered, with appropriate on-site renewables and a design-led approach to reducing whole-life carbon emissions through high standards of fabric performance and consideration of construction materials and methods. Evidence of how the energy hierarchy has been followed should be provided, along with details of emissions reductions and other benefits achieved at each stage (Be Lean, Be Clean, Be Green, Be Seen).
2. On site renewable energy generation should be considered from the outset – maximising opportunities for effective generation and storage will have a bearing on the masterplanning and massing of the development.
3. Heat networks and opportunities for community energy should be considered carefully in the feasibility studies.
4. If proposed, capacity for energy storage and demand side response controls will be viewed as a significant benefit due to their contribution to energy resilience which is a key climate adaptation priority in Wokingham.
5. At full or reserved matters application stage, the full details of specification of such schemes will be required including generative and storage capacity, location of plant and maintenance strategy.
6. The location, scale and nature of proposed renewable and low carbon technologies must be shown on any plans, elevations, sections and illustrative views provided with the application/s.
7. Sustainability and Energy Statements should show how the proposed scheme for renewable or low carbon technologies was selected and what if any impact this had on iterative masterplanning, massing and building design.
8. To comply with Part 12 (b) of Policy CP1, development must show how passive design principles have been implemented at all scales to reduce resource consumption. Measures to consider include the following:
 - 8.1. Glazing – glazing ratios and arrangements must consider overheating risk.
 - 8.2. In general: the size of glazing provided should be considered in relation to the size of the internal space it serves – small rooms with large glazed areas will be at increased risk of overheating, however a deep plan with minimal glazing will not benefit from sufficient natural lighting.
 - 8.3. Horizontal glazing will perform better than vertical, and full height glazing should be avoided (an upstand of at least 800mm is recommended).
 - 8.4. Openable windows should be prioritised to assist with the passive ventilation strategy. Cross-ventilation should be provided wherever possible.
 - 8.5. G-values should be considered to balance solar transmittance (a value of 0.3-0.4 is recommended).
 - 8.6. Glazing orientation has a significant impact on energy use and overheating risk: East and West facing rooms are susceptible to overheating due to low-

angle sunlight in the morning and evening - cross-ventilation is especially important in East and West facing rooms. Shading should be provided above South-facing windows to protect from high-angle summer sunlight while allowing low-angle winter light to enter. Best practice for UK glazing ratios: 25% on the Southern elevation, up to 20% on Eastern/Western elevations, as little as possible on the Northern elevation.

- 8.7. Provision of a daylight strategy and/or site analysis showing consideration of sun path and shading will be positively viewed.
- 8.8. Passive cooling through natural ventilation, effective deployment of thermal mass, solar shading, consideration of albedo in external spaces and appropriate landscaping will be assessed at application stage.
- 8.9. The best schemes will balance high airtightness with optimised passive ventilation and energy efficient mechanical ventilation with heat recovery (MVHR).
- 8.10. To counter overheating risk, the cooling hierarchy should be followed. Mechanical ventilation with heat recovery used to complement natural ventilation as necessary.
- 8.11. CIBSE methodologies for thermal comfort modelling are recommended as a more thorough alternative to the modelling provided through Part O of the Building regulations. Use of TM52 and/or TM59 analysis will be seen to confer significant benefit at application stage.
- 8.12. In general, higher densities and simple forms will lead to the most energy efficient buildings. Homes should aim to have a Heat Loss Form Factor (HLFF) of 1.5 or lower, however this can be much lower (around 0.5) for some apartment designs.
- 8.13. A low HLFF will have a significant impact in terms of operational energy demand. Simple roof forms and attached units should be used wherever possible.
- 8.14. Formally efficient buildings which are appropriate in scale and avoid excessive glazing will also have reduced embodied carbon compared with larger or more complex alternatives.
- 8.15. The following tables illustrate limiting and best practice values for building fabric performance. Proposals should target best practice wherever possible.

Building element	Unit	Part L 2021 limiting value	Best practice value
External wall	W/m2.K	0.26	0.12
Party wall	W/m2.K	0.20	0.10
Roof	W/m2.K	0.16	0.10
Floor	W/m2.K	0.18	0.10
Vertical windows	W/m2.K	1.60	0.80

Rooflights	W/m2.K	2.20	1.00
Doors	W/m2.K	1.60	1.00
Air permeability	m3/h.m3 @ 50 Pa	8.0	<1.0
G value of glass	absolute	none	0.4 – 0.3

Table 1: fabric performance standards for dwellings

Building element	Unit	Part L 2021 limiting value	Best practice value
External wall	W/m2.K	0.26	0.12
Roof (pitched)	W/m2.K	0.16	0.10
Roof (flat)	W/m2.K	0.18	0.10
Floor	W/m2.K	0.18	0.10
Vertical windows	W/m2.K	1.60	0.80
Rooflights	W/m2.K	2.20	1.00
Doors	W/m2.K	1.60	0.80
Vehicle doors	W/m2.K	1.30	0.80
Air permeability	m3/h.m3 @ 50 Pa	8.0	<1.0
G value of glass	absolute	none	0.4 – 0.3

Table 2: fabric performance standards for buildings other than dwellings

Fitting type	Non low-flow consumption	Best practice consumption
WC	5 - 9 L	< 4 L
Shower	13 L / minute	6 L / minute
Handwash basin taps	8 L / minute	2 L / minute
Sink taps	10 L / minute	4 L / minute
Dishwasher	1.25 L / place setting	< 0.7 L / place setting
Washing machine	14 L / kg	6 L / kg

Table 3: best practice water efficiency for common fixtures

9. Whole Life Impacts should be considered in the Energy and Sustainability Statement. Issues to address include:
 - 9.1.1. use of any resources existing on site,
 - 9.1.2. reducing the need for demolition and excavation,
 - 9.1.3. specification of local, recycled, biogenic and low-carbon materials,
 - 9.1.4. any commitment to specify insulants with a Global Warming Potential (GWP) no greater than a target value for example 5,
 - 9.1.5. 1.9.5. any commitment to specify materials and products having an Environmental Product Declaration (EPD).
 - 9.1.6. Whole Life Carbon Assessment is strongly recommended and if proposed will be viewed as a significant benefit of the scheme. If WLCA is to be undertaken for any part of the scheme, the scope should be clearly defined in the Energy and Sustainability Statement, as well as any target for whole life carbon per area. The monitoring and compliance framework should be explained.
10. At Outline or Full Planning Application stage, in addition to outlining how the scheme will comply with the sustainability requirements of Policy CP1 of the WBC Core Strategy 2010, the Design and Access or Sustainability & Energy Statement must show how the scheme will comply with:
 - 10.1. Policy CC04 part 1 (b) (as clarified by the WBC Climate Change Interim Policy Position Statement, 2022 (CCIPPS)) of the MDD Local Plan – requires that proposals must demonstrate that new homes will use no more than 110L per person per day (including 5L allowance for external use) as modelled. Specifications for fixtures with flow rates and water efficiency calculations should be submitted. For further details please refer to the Climate Change Interim Policy Position Statement.
 - 10.2. Policy MDD CC04 part 2, (a) (as clarified by CCIPPS) – requires that non-residential buildings or development over 100m² G.I.A. achieve BREEAM “Excellent” certification.
 - 10.3. MDD CC04 part 3 – requires incorporation of suitable waste management facilities on-site, including recycling.
 - 10.4. MDD CC05 part 1 – encourages proposals to identify local opportunities to contribute towards decentralised energy supply from renewable and low-carbon technologies.
 - 10.5. MDD CC05 part 2 (as clarified by the CCIPPS) - requires both developments of 10 or more homes, and those consisting of 1000 m² or more of non-residential floor area, to supply a modelled Dwellings Emission Rate (DER) or Buildings Emission Rate (BER) respectively. These must demonstrate a minimum 10% carbon emissions reduction relative to Target Emission Rate/s (TER/s) arising from the version of the Building Regulations extant at time of the full planning or reserved matters application(s) for each parcel of development. For further details please refer to the Climate Change Interim Policy Position Statement.

11. General: all targets, frameworks and certifications intended for the scheme should be highlighted within the Energy and Sustainability Statement. It should be clear what the goals are, and how progress towards these and compliance/ongoing performance will be monitored. Use of independently assessed certifications such as Passivhaus are strongly encouraged and will be viewed as a significant benefit if proposed.
12. General: Energy and Sustainability Statements must explain how the proposals approach both climate change adaptation and mitigation.
 - 12.1. Climate change adaptation information should make reference to local current and projected climate hazards relevant to the site, which in Wokingham will include water stress and high summer temperatures.
 - 12.2. Climate change adaptation measures should include reduction in operational energy demand, provision of energy storage, reduction in operational water demand, provision of water harvesting or recycling equipment, buildings which are resilient to overheating risk through passive design measures and planting schemes which are suitable for current and future conditions on site for example.
 - 12.3. The mitigation section should demonstrate how both embodied and operational emissions arising from the proposed development will be reduced and mitigated.
13. Site planning recommendations
 - 13.1. Where proposals include the demolition of an existing building, a Whole Life Carbon Assessment is strongly recommended. A pre-demolition audit can be used to identify any materials or structures which can be reused on site to reduce embodied emissions.
 - 13.2. Applicants are encouraged to consider whether more sustainable outcomes could be achieved through more efficient use of the land – i.e. higher density (50 or more dwellings per hectare) development over a smaller footprint.