

Appendix B



Environmental Design and Construction

A checklist for Calderdale Council building projects

Introduction

Calderdale Council's Building Environmental Standards (BES) [\[insert link\]](#) were approved by full Council on XXX. In accordance with the BES, the *Environmental Design & Construction Checklist* must be completed for all Council building projects (i.e. new builds, extensions and refurbishments of buildings either owned or leased by the Council) with a capital cost between £60,000 and £500,000. The Checklist must be completed for all projects within these limits, whether the work is carried out in-house or by a third party. Projects costing more than £500,000 are required to aim for BREEAM Excellent (Very Good for extensions/refurbishments) and undergo a full BREEAM assessment.

The purpose of Calderdale Council's Building Environmental Standards is to reduce the environmental impact of new and existing Council buildings in relation to four broad issues:

- mitigating climate change by reducing greenhouse gas emissions
- adapting to the effects of inevitable climate change
- sustainable and efficient use of resources
- local air, land and water pollution

More information about these issues can be found in the *Environmental Design & Construction Guide* [\[insert link\]](#).

How to use the Checklist

The Checklist provides a set of environmental criteria to be incorporated within the project. From the project's inception, the Checklist and Guide should be used as a prompt to inform the building's design. The project manager or lead officer on the design team should contact the BES Technical Group early on to agree which parts of the Checklist are applicable for the project, who is responsible for completion of the Checklist, and when the completed Checklist should be submitted. The contact for the Technical Group is:

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Sustainability Officer
Northgate House
Halifax HX1 1UN

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The scope of the Checklist is similar to that of BREEAM, though narrower. This reflects the smaller size of projects for which the Checklist has been designed. With the exception of the first two questions, the Checklist is divided into six sections: **energy**, **water**, **biodiversity**, **materials**, **waste** and **travel**. Each Section comprises a series of questions relating to that particular subject. Further explanation of the design features, technologies and terms used in the Checklist, along with sources of further information and help, can be found in the accompanying *Environmental Design and Construction Guide* [\[insert link\]](#).

The Checklist has been designed to accommodate all types of building project, therefore some questions may not be applicable to your project. You should discuss this with the BES Technical Group at the earliest opportunity, and agree the scope of the checklist for your specific project.

Each point on the Checklist must be marked 'Yes' or 'No'. Where 'Yes' is marked, sufficient supporting evidence must be provided to show how the requirement has been met. Examples of the type of evidence expected for each point on the Checklist are given in the Appendix to the

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Checklist. Where 'No' has been marked, a clear justification of this decision must be provided in the table on [page 8](#).

The completed Checklist must be sent by email or internal post to the BES Technical Group at the agreed submission time. The Technical Group will consider the evidence provided and if satisfied with the Checklist, the proposed building design will be accepted and may proceed. If there is insufficient evidence or explanation provided, the Technical Group will return the Checklist to the project team with a request for further information and/or suggested adjustments to the design. Projects may only proceed once the Checklist has been accepted.

The Council officer designated as lead officer for the project will be responsible for ensuring that the design commitments made in the Checklist are carried out during construction. Evidence of the completed project's compliance with the Checklist should be compiled and retained for the audit trail. This evidence pack will include documents such as Energy Performance Certificates, certificates of installation or compliance (e.g. with airtightness levels), copies of relevant elements of the Health & Safety file.

General

For an explanation of the design features and technologies used in the checklist, and for further sources of information and help, please refer to the *Environmental Design and Construction Guide* which accompanies this document.

	YES	NO
G1 Have existing buildings suitable for renovation been researched prior to the decision to build new?		
G2 Has consideration been given to the maintenance requirements of all building features, ensuring that these are kept to a minimum and can be easily understood by the building occupants?		

Where 'NO' has been marked for any of the points above, please provide a reason in the table on [page 8](#).

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Energy

E1 Designing for low energy use	YES	NO
a) Is the main glazed elevation oriented within 30° of south, with a correspondingly small proportion of glazing on the north elevation?		
b) Have high occupancy rooms been located on the south side, and rooms with low occupancy or high internal heat gains to the north?		
c) Has solar shading of glazed areas been provided?		
d) Have exposed building elements with high thermal mass been included?		
e) Does the building have a shallow plan layout, or incorporate a central courtyard for daylighting?		
f) Have 'buffer zones' been incorporated at main entrances?		
g) Is shading and shelter provided by strategic planting outside the building?		
h) Have external surfaces been designed to reflect light and warmth?		
i) Where 'conventional' natural daylighting is not possible, have sunpipes been incorporated?		

OR

E1 Designing for low energy use
Using the space on page 9, describe how the building has been designed for low energy use, including consideration of location, orientation, building materials and positioning of glazed areas.

E2 Energy conservation and efficiency – building fabric	YES	NO
a) Does the building design improve at least 10% on the CO ₂ emission rate required by Part L of the Building Regulations?		
b) Have window systems with a maximum U-value of 1 been specified throughout the building?		
c) Have airtightness levels of 5m ³ /m ² /h @ 50Pa been designed and specified for the building?		
d) Does the design specification stipulate airtightness testing of the building to take place prior to completion?		
e) Has air-conditioning been avoided?		
f) Does the building design include passive or low-energy ventilation systems?		

E3 Space heating and hot water	YES	NO
a) Has the viability of different renewable heat technologies been thoroughly explored?		
b) Has the most efficient heating system viable (heat generator plus distribution) been selected?		

E4 Electricity	YES	NO
a) Has the viability of different renewable electricity technologies been thoroughly explored?		
b) Have the most efficient electrical services and appliances viable been selected?		

Where 'NO' has been marked for any of the points above, please provide a reason in the table on page 8.

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Water

WAT1 Water conservation and recycling	YES	NO
a) Will water use per building occupant per year be reduced to less than 4.4m ³ through use of water-efficient and low-water appliances?		
b) Has major leak detection equipment been specified on all mains water supplies to the building?		
c) Has rainwater harvesting and/or greywater recycling been incorporated into the building design?		
WAT2 Minimising flood risk and surface water pollution	YES	NO
a) Does the roof provide a suitable overhang or other solution to protect the building from damage caused by heavy rainfall?		
b) Are the foul-water and surface-water drainage systems separate?		
c) Have the principles of Sustainable Urban Drainage (SUDS) been adopted in the building design? (E.g. permeable paving, green roofs, swales – see the accompanying guidance document for more information.)		
d) Where SUDS techniques cannot be employed around the building, have oil separators been specified?		
e) Have gutters and downpipes been sized to allow for future increases in rainfall events?		
WAT3 Managing ground conditions	YES	NO
Has the design included precautionary measures regarding any risk of subsidence or landslip caused by increased surface water runoff attributable to climate change?		

Biodiversity

B1 Site assessment	YES	NO
a) Has a biodiversity assessment, to include an ecological data search and surveys, covering buildings and adjacent land, been performed?		
b) Has an assessment of the ecological impact of the proposed works on wildlife habitats and species within the site boundary and on nearby land been made?		
B2 Biodiversity protection	YES	NO
a) Have measures been specified to protect habitats and species during and after development?		
b) Where habitat or species loss is unavoidable, have mitigation measures been agreed?		
B3 Biodiversity enhancement	YES	NO
a) Have measures to enhance the biodiversity value of the site been identified?		

Where 'NO' has been marked for any of the points above, please provide a reason in the table on page 8.

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Materials

M1 General principles	YES	NO
<i>For each of the major building elements listed below, are the materials used A-rated in the BRE's Green Guide to Specification? (See the accompanying guidance document for more information.)</i>		
Foundations		
Walls		
Roof		
Structure		
Internal partitions		
Finishes		
Rainwater goods		
Internal drainage		
Underground drainage		
Ducting		

M2 Construction materials – other issues	YES	NO
a) Have/will all temporary and permanent timber and wood-derived products be obtained from legal and sustainable sources? (Follow the steps outlined in section M2 of the Guide.)		
b) Has timber been specified for the building's structural frame and other above ground structural members, in preference to steel or concrete?		
c) If concrete has been specified for any element of the building, have the alternatives been considered?		
d) Will the contractor be obliged to provide chain of custody certificates for all supplied timber?		
e) Does the project specification exclude uPVC windows, doors, cladding, pipework and cable insulation?		
f) Have insulation materials with low embodied energy and high thermal performance been specified?		
g) Have the external elements of the building been designed to be resilient in exceptionally hot, stormy and/or wet weather conditions?		

M3 Fixtures, fittings and finishes	YES	NO
a) Have natural/untreated materials been specified wherever possible?		
b) Have flood resilient materials been specified inside the building?		
c) To avoid waste, have specified finishes been approved by the end user before installation?		
d) Have uPVC and other plastics been avoided wherever possible?		
e) Have VOC-free (Volatile Organic Compounds) paints and finishes been specified?		

Where 'NO' has been marked for any of the points above, please provide a reason in the table on page 8.

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Waste

WAS1 Construction and demolition waste	YES	NO
<i>Site Waste Management Plans (SWMPs), now a legal requirement for large construction projects, are compulsory for all Council projects with a capital cost of £250,000 or more. However, ALL projects should consider the following:</i>		
a) Has the project been designed to use standard sizes/quantities of materials? (See the accompanying guidance document for further information.)		
b) Have materials from any demolition on site been considered for re-use?		
c) Have materials and components been specified that can easily be broken down to their constituent parts at the end of the building's life, for re-use elsewhere?		
d) In projects over the £250,000 threshold, has the designer made a statement for the SWMP about how waste has been minimised through design?		
WAS2 Designing for minimisation of waste-to-landfill in use	YES	NO
a) Has designated space been provided internally and externally for recyclable waste storage?		

Travel

T1 Travel	YES	NO
a) Policy T1 of the Calderdale Unitary Development Plan (UDP) requires that new developments over a certain size produce a Travel Plan prior to seeking planning permission. If required, has a coherent and comprehensive Travel Plan been prepared?		
b) Has parking provision been minimised in accordance with best practice?		
c) Have designated car-sharing spaces and/or pool cars been included in the design?		
d) Have adequate secure, covered cycle storage facilities been included in the design? (See UDP Policy T19 for minimum requirements on new developments.)		
e) Have shower and changing facilities, including lockable storage for clothing and equipment, been included in the design?		
f) Will pedestrian and cycle access be safe, attractive and well-maintained?		

Where 'NO' has been marked for any of the points above, please provide a reason in the table on page 8.

Reasons for non-compliance with Checklist points

Checklist point (e.g. T1a)	Reason for non-compliance
	<p style="text-align: center; opacity: 0.3; font-size: 48px; transform: rotate(-30deg);">DRAFT</p>

Please continue on separate pages as necessary