

STRATEGIC PLANNING & PLACE

BUILDING CONTRACT DIRECTIVE

DATE: August 2016

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Building Design and Construction Sustainability Requirements

1 Introduction

REFERENCE

The Council's Sustainability Strategy makes a commitment to reducing carbon emissions, adapting to a changing climate, using resources efficiently and effectively and making sustainability part of the normal design function on WSCC projects. To meet our targets in these areas we need to ensure that we embed sustainability into the design and construction of our buildings.

The Council also has an Energy Strategy that includes the priorities:

1. To reduce energy consumption and increase energy efficiency across the West Sussex County Council estate;
2. To integrate energy generation and infrastructure into the development of West Sussex County Council assets;

We have set out our expectations in the following document. Contractors and Designers must ensure that all of our requirements are met, and submit a completed checklist (Appendix A) to the overseeing Project Manager at the appropriate stage.

Auditing and spot checks will be taking place to ensure that the requirements are met.

2 Building Design Headline

WSCC supports the design and delivery of sustainable thermally efficient buildings that are easy to maintain and exploit simple low energy natural solutions and reduce the running and maintenance costs across its estate. The emphasis in achieving this aim should be on the building structure and fabric, supported by renewables.

All renewable equipment must comply with the current Government British standard to ensure that any grant tariffs arrangements can be claimed.

The cost of providing a sustainable building should be just as cost effective as a traditional build style. A sustainable approach should be embodied in the design and build process from start to finish.

Options for maximising opportunities to reduce energy consumption; increase energy efficiency and integrate energy generation should be explored and costed. Information about the expected savings over the lifetime of the building should be presented alongside the expected cost of investment.

3 BREEAM and EPC

All new Property construction schemes costing over £1.5 million will have a BREEAM Pre Assessment and achieve a minimum BREEAM "Very Good" Rating.

Energy Performance Certificates and Display Energy Certificates will be required for qualifying projects.

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NOTE:

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4 Fabric/Structure

Roofs

Roofs should be formed in such a way that energy saving/generating plant (i.e PV's, heat exchangers, etc.) can be safely supported and there is adequate access for future maintenance.

Materials

All materials should be good quality with a low carbon footprint, and of renewable source that meets industry sustainability standards, i.e. Forest Stewardship Council (FSC), etc. and complies with National Building Specification requirements.

5 Building Management Systems

These should be suited to the skill base and resources available to the end user in management and operation.

Any BMS must be Multi and open protocol compatible with and directly connectable to: LON, BACnet, Modbus, SNMP, Crestron and iLight.

6 Metering

All new build properties must have gas / electric / oil / LPG AMR installed on all meters before occupancy. The contractor is to ensure that all new meters are compatible with AMR's. WSCC Project Managers are to advise the Carbon Management Engineer of the project finance code and details of the project to enable the Carbon Management Engineer to arrange installation of AMR's.

7 Lighting Control Gear

For interior lighting, local manual, presence detection, timed or photoelectric controls must be selected based on the type of space and whether it is daylight, according to the guidance in BRE Digest 498 'Selecting lighting controls'.

Exterior lighting must include controls to incorporate photoelectric switching so that they are not lit during daylight hours, plus either time control or presence detection so that they are switched off or dimmed late at night, or when they are not required.

Energy efficiency lighting controls must be commissioned so that the lighting is only switched on when needed, thereby minimising energy consumption, or regulated in terms of light output and energy consumption to take full advantage of daylight availability.

8 Lamps

Lamps in all permanent buildings should meet LED Class A standard or equivalent.

9 Heating

Heating systems must be zoned where appropriate, with consideration given to multi storey or multi use buildings. Where possible mitigate excessive single zone heating pipe work runs (eg multiple floors)

Space heating must not exceed set point 20 degrees C unless there is building specific project details requirement for increase. In addition to this heating must be optimised in accordance with occupancy hours of the associated building.

Heat gains must be minimised, and passive cooling systems must be used.

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(unless there is project specific information to the contrary)

Natural ventilation must be used
(unless there is project specific information to the contrary)

10 Boilers

Condensing A++ rated boilers must be used.

11 Renewables

Solar photo voltaics to be incorporated into all new building projects where suitable; but other renewable power and heat sources should be explored. This could include:

- Solar Thermal
- Heat Exchangers
- Biomass (Bioenergy)
- Ground Source Heat Pumps
- Combined Heat and Power

Designers should prepare a cost / benefit report providing justification for inclusion or otherwise into the project.

Opportunities for district heating schemes with neighbouring buildings should be explored and included in the feasibility report.

Where renewable technologies are being installed on roofs or other high level areas (e.g photo voltaics/solar thermal), safe permanent access must be included as part of the installation, to enable future access for maintenance.

Funding for renewables

WSCC is part of Your Energy Sussex which will deliver energy saving and renewable energy projects across homes, businesses and public sector buildings, including schools and academies, across Sussex.

Your Energy Sussex offers opportunities for funding for renewable technologies (at the moment exclusively PV) for new builds. WSCC Project Managers or Contractors must contact the YES Partnership Manager to explore this option in feasibility stage.

Where the business case indicates that the proposal is viable, funding may be available from Your Energy Sussex. This should be submitted to the YES Partnership Manager for comment. The YES Partnership Manager will also advise if YES will be able to fund the measures.

12 Water

Measurement

All new building properties must have a water automated meter reading installed on all meters.

Taps

In WC Suites, flow rates less than 4 litre/min and in kitchens flow rates of 5l/min must be delivered through aerated easy push percussion taps

Showers

Aerated shower heads must be installed, with flow rates of 6 litre/min or below.

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13 Flood Risk Management

The WSCC Flood Risk Management Team should be consulted at project commencement to provide input at the pre-application master planning stage of the project. Appropriate opportunities for consultation throughout the project can be agreed at this point.

In accordance with national planning policy, new development should be directed away from areas at risk of flooding (NPPF paragraphs 100-108 and associated planning practice guidance).

All major development proposals require a site-specific flood risk assessment that in turn should inform the drainage strategy (section 14). This will need to:

- Follow the sequential and exception tests (where applicable) to ensure development is appropriately flood resilient and resistant, safe for its users for the development's lifetime, and will not increase flood risk overall;
- Comply with all relevant Local Planning Authority policies with respect to flood risk;
- Document arrangements for adoption by any public authority or statutory undertaker of flood risk assets and any other arrangements to secure the operation of the flood risk scheme throughout the lifetime of the development;
- Demonstrate that the flood risk strategy will not negatively impact the quality of surface water or ground water.

In designing to minimise the risk of flooding, the proposals should identify and incorporate opportunities for improved natural flood management and enhancements to biodiversity, amenity and recreation.

14 Drainage Systems

The WSCC Flood risk Management Team should be consulted at project commencement to provide input at the pre-application master-planning stage of the project. Appropriate opportunities for consultation throughout the project can be agreed at this point.

There is a presumption for SuDS in new developments unless there are compelling reasons otherwise. Sustainable Drainage Systems must use soft landscape/open systems unless there is a sound engineering or economic reason to prevent their use.

All major development proposals are to be accompanied by a Drainage Strategy informed by the Flood Risk Assessment for the site (see section 13). This should ensure that drainage design is based upon best practice guidance set out in the CIRIA SuDS Manual (C753) and will need to demonstrate the extent to which the project has adhered to:

- National Planning Practice Guidance – including the hierarchy for sustainable drainage (paragraph 080);
- the Defra Technical Standards for Sustainable Drainage Systems;
- the BREEAM pollution 03 standard on Surface water run off;
- best practice guidance on the use of treatment trains to manage water quality;
- best practice guidance on the physical and financial provision for lifetime maintenance; and
- best practice guidance to support amenity and biodiversity.

Highways drainage should be designed according to the Highway Drain Criteria document and S278/38 construction details available from Strategic Planning Development Group.

15 Ecology and Heritage

Consultation should be sought from the Environment and Heritage Team at all stages and appropriate funding provision made available to mitigate the effects of the development.

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A Green Infrastructure Audit of the site and neighbouring area must be completed in the initial stages of the project design to establish the existing baseline conditions for ecology, trees and the Green Infrastructure Network.

Set out a Green Infrastructure Strategy for the site which links to neighbouring assets, identifying opportunities to protect and enhance GI drawn from the Audit. This should be closely linked to the opportunities for sustainable drainage for the site (section 14). Follow any local GI policies set out by the LPA.

Produce a Site Construction Environment Management Plan, GI Management and Maintenance Plan

16 Waste

In all of our development work, our aim is to minimise any adverse impacts that construction has on the environment. We seek this through the design process, materials selection, construction techniques, and operational methods. All organisations appointed to work on our behalf are required to work in accordance with these principles.

The design shall work to the following general design principles:

- forecast likely waste streams; reduce materials wasted in construction;
- reduce the proportion of waste that is sent to landfill;
- reduce materials used in construction; and
- increase the use of recovered materials and materials with above-average levels of reused and recycled content

Waste - During build

Recover at least 70% of construction materials

Recover at least 80% of demolition, strip-out and excavation materials (where applicable)

- Site waste must be managed in a responsible way with a site waste management plan in place. A SWMP Lite is considered good practice, and would be adequate.

Waste – Completion

On completion of the Works, the project team shall submit a copy of the completed Site Waste Management Plan to the overseeing Project Manager for forwarding to the Environment and Heritage Team, reporting the forecast and actual performance for waste quantities, disposal routes, and reused and recycled content used in construction

17 Transport

Designers should understand and mitigate the impact of any increased transport as a result of the finished build. The final development should enable people to have improved sustainable travel choice, with an emphasis on safety.

To achieve this, the County Highways Manager, County Parking Team, Safer Routes to School team, and Area Highways Managers must be consulted at the concept and feasibility stage of any development or expansion, prior to the submission of any preliminary planning application. During build, construction and other site related traffic should be managed to minimise the impact on the local community.

CONCLUSION

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Building Design and Construction Sustainability Requirements Checklist

The following checklist should be completed and submitted at the end of the design stage of the project to the overseeing WSCC Project Manager for forwarding to the Sustainability Team.

On traditionally procured projects the lead consultant should ensure that the checklist is completed and on non-traditionally procured projects the Design and Build Contractor should ensure that the checklist is completed.

		Yes	No
1	Have options for maximising opportunities to reduce energy consumption, increase energy efficiency and integrate energy generation been explored and costed?		
2	Has information about the expected savings over the lifetime of the building been presented alongside expected cost of investment?		
3	Has a BREEAM Pre Assessment been carried out and Very Good mark achieved? (£1.5m + Value only)		
4	Has an EPC and DEC been provided on qualifying projects.		
5	Does the building have low U and W/mK values?		
6	Does the roof design allow safe access for maintenance?		
7	Do materials meet industry standards, including FSC wood and National Building Specifications?		
8	Has a building management system been included?		
9	If yes, is it Multi and open protocol compatible with and directly connectable to: LON, BACnet, Modbus, SNMP, Crestron and iLight?		
10	Have AMR meters been installed for all utilities?		
11	Has the BRE Selected lighting controls Digest been followed to select appropriate lighting controls?		
12	Are light lamps LED Class A?		
13	Is heating zoned?		
14	Has space heating been set to 20oC?		
15	Has only passive cooling and natural ventilation been used (no air conditioning units)?		
16	Are boilers condensing A++ ?		
17	Have solar photo voltaics been included?		
18	Are taps aerated, with easy push percussion taps, with maximum flow rates of 4 litre/min in kitchens or 5 l/min in other areas		
19	If showers are installed, are heads aerated with maximum flow rates of 6 litre / min?		
20	Has the need for a Flood Risk Assessment been considered and does it satisfy the criteria of section 13?		
21	Has the need for a Drainage Strategy been considered and does it satisfies the criteria of section 14?		
22	Has highways drainage been designed according to the Highway Drain Criteria document and S278/38?		
23	Has the Environment and Heritage Team been consulted?		
24	Has a Green Infrastructure Audit been completed, and a Green Infrastructure Strategy produced?		
25	Has a Site Construction Environment Management Plan, GI Management and Maintenance Plan been produced?		
26	Have at least 70% of surplus construction materials been recovered?		
27	Were the County Highways Manager, Flood Risk Manager, County Parking Team, Safer Routes to School team, and Area Highways Managers consulted at the concept and feasibility stage?		
28	Have the criteria been met at no or minimal extra cost when compared with a more traditional build approach?		

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