

BUILDINGS CHECKLIST

Directorate	Communities, Housing and Infrastructure
Author	Environmental Policy
Maintain by	Overall Environmental Policy but with input from various services
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Please refer to the guidance to aid completion of the checklist

BREEAM SECTIONS	E - Energy H&W – Health and Wellbeing
	LU – Landscape and natural heritage M - Materials P - Pollution
	T – Transport W – Water WA - Waste

PROJECT TITLE:	<input type="text"/>
DATE CHECKLIST COMPLETED:	<input type="text"/>
COMPLETED BY WHOM:	<input type="text"/>

It is important to be aware of other policies and initiatives such as ACC’s Timber Procurement Policy for example which should be implemented on all projects. Reference should be made to Local Development Plan policies, Supplementary Guidance and Technical Advice notes. These set the standards of sustainable design for private developers. ACC is expected to achieve and where possible exceed these standards in its own developments, to demonstrate commitment and leadership on sustainable design.

ITEM NO.	ACTION TO BE CONSIDERED	✓	BREEAM SECTION	COMMENTS (If ticked please elaborate, if not ticked please provide reason)
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SITE SELECTION AND ASSESSMENT (relevant to new construction only)

1	Is there a site available for the project? If so, do ACC own it or has it to be procured?			
2	Consider if the development can utilise brownfield land or contaminated land that could be remediated following risk assessment/appraisal. Be aware that degraded land may have biodiversity value, provide green space network, habitat links, or undertake de-culverting of surface water drains.		LU	
3	Consider orientation of the site and how this can impact upon the development’s design, including rainfall, exposure to winds, orientation and sun angles.			
4	Conduct a climate risk assessment to mitigate against impact of extreme weather, ensuring building design accommodates functional adaptability.		WA	
5	Consider the site’s access in relation to safety and security, extending from the boundary to the building. If laboratory facilities feature, then consider containment.		H&W	
6	Consider proximity to amenities, with easy access to local services, whilst following Safe by Design principles which allows natural policing.		T	

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7	Integrate water and landscape considerations to provide improved landscape design quality and enhanced biodiversity e.g. SUDS ponds.		W	
8	Appraise the opportunities for conserving and enhancing biodiversity, landscape, access and cultural heritage.		LU	
9	Identify the ecological characteristics of the site and its surroundings, such as protected or important habitats and species, and existing and potential habitat linkages with adjoining areas. Be aware that mobile species, (e.g. badgers, birds, red squirrels) may occupy adjoining land and use the site as feeding/foraging habitat. Minimising impact or enhancing site ecology.		LU	
10	Survey and analyse the landscape/townscape and visual setting of the site and its surroundings, and identify opportunities to retain, enhance and reinforce important characteristics and features, including historic assets, vegetation, stone dykes, and views. Consider whether a landscape character and visual impact assessment will be required.		LU	
11	Analyse the site and surrounds for opportunities to enhance important gateways into and around the city, and link to existing open space, paths and cycle routes to encourage active travel and outdoor activity.		LU	
12	Identify drainage patterns and flood potential, taking account of surface water runoff and minimising watercourse pollution.		WP	
13	Choose a site which avoids adverse impacts on environmental, cultural and social assets, for example protected sites and species; historic monuments, listed buildings and their setting; trees, woodlands and wetlands; landscape character; core paths; and the green space network. Where avoidance is not possible, sites should be selected to minimise impacts. Sites should also be selected which will not exacerbate climate change impacts, for example avoid flood risk areas and impacts on water bodies.			

DESIGN STAGE

DIGITAL (most relevant to new construction and major refurbishment/extension)

14	All developments are to be connected to the fibre network (FTTP) where available or be fibre ready through provision of local ducting and to building connections.			
15	Consider installation of cabling or Wi-Fi infrastructure to the internal developments and external environment.			
16	Have double-duct system for digital infrastructure, where feasible. Potential for leasing this in future.			
17	Consider provision of cabling internal to the development to support sensor networks and effective building management systems.			

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18	Consider the efficacy of providing external solutions to monitor environmental conditions in the proximity of the development supporting roads and building maintenance, environmental and health service provisions.			

ENERGY

19	Consider passive design, maximising natural daylight in the building design and ensuring minimal emissions/energy use. Embed best practice in decision making.		H&W	
20	Consider building orientation before incorporating large areas of glazing into the design and maximise the use of passive solar gain.		H&W	
21	Consider how glare from windows can be controlled by the introduction of better building layout, design or blinds.		H&W	
22	Incorporate roof glazing or sun-pipes to internal areas where windows cannot be fitted.			
23	Specify energy efficient windows.			
24	Specify a green roof to aid insulation, enhance biodiversity and reduce the urban heat island effect (where practicable).			
25	Design building to maximise the use of natural ventilation and minimise the requirement for mechanical assistance. This would be determined by developing a ventilation strategy aligning to best practice. For guidance see "TM57 Integrated School Design" by CIBSE' http://www.cibse.org/Knowledge/knowledge-items/detail?id=a0q2000000817fKAAS		E	
26	Where relevant use bore holes to meet the cooling requirements of a building.		E	
27	Ensure that high levels of insulation and good building seals are designed in, while avoiding the potential for overheating.		H&W	
28	Use thermal modelling and take account of climate projections and identifying thermal zoning and controls.		E, H&W	
29	Specify the most energy-efficient electrical appliances fittings and light fittings, including refrigeration and transport systems e.g. lifts/escalators.		E	
30	Specify appropriate lighting controls for dimming or with switching arrangements which encourage users to switch off when not required or removing that requirement through automatic switching.		E	
31	Avoid large clusters of light switches so that users cannot light large areas from one central location.			
32	Where appropriate consider no external lighting. If required, then use of low energy systems concentrated in appropriate areas with upward lighting minimised.		E, P	

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33	Specify energy efficient boilers and low NO _x , with consideration of alternative fuel sources where practicable, if passive standards can't be met. Adhering to best practice guidance.		E, P	
34	Consider use of Ground Source and Air Source Heat Pumps to contribute to building heating load.		E	
35	Consider installation of solar panels for hot water heating where orientation of building and roof structure permit.		E	
36	Consider installation of photovoltaics for the generation of power where orientation of building and roof structure permit.		E	
37	All projects which can connect to the heat network are expected to do so where possible or be ready to connect to a future heat network.		E	
38	Consider installing wind turbines on the site or attached to the building where appropriate.		E	
39	In refurbishment projects within the limitations of the brief take the opportunity to improve energy efficiency.		E	
40	In refurbishment projects increase the levels of insulation for walls and roofs where practicable.		E, H&W	
41	When refurbishing a property identify inefficient boilers, heating systems and electrical fittings and where possible within budget replace these with energy efficient units.		E	
42	Use visible monitoring devices as educational tools that let building users see what energy is being generated from renewable energies.		E, H&W	
43	All non-domestic buildings will be required to have active energy monitoring installed and in the case of larger more complex buildings a building management system (BMS). This requirement should be discussed at inception of the project.		E	
44	All domestic buildings should have active energy monitors installed.		E	
45	Use of sub-metering for major energy consuming systems, e.g. lighting, heating and localised to section/floor areas.		E	
46	Consider suitability of developments to be designed with the capability of participating in smart grid deployment to maximise community, commercial and environmental benefits from local generation and storage schemes, Electric Vehicle charging facilities and micro generation at household level.			
47	Consider the possibility of the design and expansion of the district heat network when designing the infrastructure and utilities services for a new development. The district network installation of underground piping requires to be planned in a structured way to meet not only the objectives of the immediate development but the potential for further expansion at a future date			

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LANDSCAPE AND NATURAL HERITAGE (relevant to external areas only)				
48	Use infiltration drainage devices to serve small catchment areas			
49	Take design measures to conserve and enhance the ecological, landscape and cultural heritage characteristics of the site.			
50	Consider the setting of important features such as trees, wetlands, water bodies and historic assets and ensure that the layout provides adequate off-set distances and buffers to protect and enhance the setting of these features.			
51	Buildings can be used to create habitats and spaces for people and wildlife through provision of green walls and green rooves.			
52	Create wildlife zones and corridors to improve connections between habitats within and outwith the site.			
53	Specify plants grown in peat-free soil, and of local provenance, where possible.			
54	Minimise the use of soil improvers and the need for intensive maintenance by specifying plants which will establish in the local conditions, Where soil improvers are required, specify peat free materials for all areas of planting.			
55	Specify plant/seed varieties to achieve a range of habitats for wildlife, considering shelter, breeding & feeding requirements.			
56	Where appropriate to site conditions and constraints, specify locally native species for tree and shrub planting.			
57	Specify porous surfaces to hard landscaped areas to increase natural drainage and reduce run-off.			
58	Consider use of plants as alternative to fences, noise barriers, or windbreaks.			
59	Informal and formal sitting-out areas and play areas should be sited in sheltered, sunny locations, and courtyards should be orientated to minimise shade.			
60	Where conservation of all habitats is not feasible or there are no habitats on site, include for appropriate habitat creation including for example bat and bird boxes. Note that some habitats cannot be 'recreated' easily or at all.			
61	Design external hard and soft landscaped areas for low maintenance regime.			

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NOISE

62	Consider acoustic performance of the development, providing sound insulation and designing around indoor ambient noise levels.		H&W	
63	Consider noise arising from fixed installations affecting nearby buildings/neighbours.		P	

RESOURCES AND MATERIALS SELECTION

64	Adopt a fabric first approach that protects vulnerable parts of the development from damage/material degradation through durability/protection measures.		M	
65	Ensure thermal insulation has a low embodied environmental impact relative to its properties.		M	
66	Encourage use of recycled content including recycled and secondary aggregates.		M, WA	
67	Can existing fixtures and fittings be reused on/offsite?		M, WA	
68	Consider the impact of the indoor environment on the well-being of users minimising air pollution and no use of VOC products.		H&W, M	
69	Specify durable long lasting materials where available as alternatives to materials that require regular maintenance.		M, WA	
70	Use WRAP toolkit to increase percentage of recycled content of materials on project, with a minimum recycled Content 10% (of value).		M, WA	
71	Check with occupants when considering fixtures and fittings longevity, how easily they can be replaced e.g. a carpet tile v carpet and avoid unnecessary waste of materials.		M	
72	Use WRAP toolkit to increase percentage of recycled content of materials on project, with a minimum recycled Content 10% (of value).		M	

TRANSPORT

73	Ensure adequate cycle storage and facilities.		T	
74	Maximise car parking capacity compared to benchmarks with provision of electric/hydrogen charging points. Consideration should be given at design stage for battery conditioning that allows for local storage/capture of energy at said charging points.		T	
75	Prioritise public transport accessibility: Proximity to public transport (dedicated bus service), core paths and cycle networks etc. Ensuring adequate signposting and supporting e.g. live updates.		T	
76	Provision of showers and drying space.		E, T, H&W	

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77	Where required, undertake a travel assessment and develop a travel plan.		T	
78	Assess viability for Mobility as a Service solution, adequate access to information and intelligent signage.			

WATER

79	Use rainwater harvesting to reduce water consumption and contribute to SUDS strategy.		W	
80	Ensure that water is metered appropriately on site and leak detection equipment is installed.		W	
81	Specify automatic flow control devices e.g. taps, showers, cisterns, waterless features – providing notices so people know how to use them.		W	
82	Consider the use of greywater recycling schemes (where adopted ensure that all pipework clearly labelled and correct treatment regime is in place).		W	
83	Consider water consumption and specify water efficient equipment, identifying and reducing water demand.		W	

TENDERING FOR WORKS

84	Specification of requirements to include compliance with BPP/Checklist/ BREEAM/LEED/HQM.			
85	Ensure development is managed through a considerate construction schemes with responsible management procedures.		MA	
86	Ensure responsible sourcing of materials which have minimal impact on the environment, by quantifying life cycle impacts and specifying green guide products.		M, MA	
87	Ensure contract requires commissioning testing schedule, inspecting building fabric, handover, building user guides and aftercare support with seasonal commissioning. Consideration should be given to environmental performance monitoring using appropriate technology.		MA	

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MANAGEMENT OF CONTRACTORS AND RESOURCES				
88	Aim to reduce on site waste to the minimum practicable level as part of design criteria.		WA	
89	Specify that the contractor is to implement a Site Waste Management Plan, aligning to the principles of the waste hierarchy. Consider opportunities for recovering, re-using and recycling waste both on and off site. (consider that embodied toxicity may however be an issue).		WA	
90	Specify that site has adequate security to reduce the possibility of waste through vandalism		WA, P	
91	Consider the use of pre-fabrication of specific items if appropriate.		WA, M	
92	On refurbishment projects consider whether specific items can be re-used following repair and upgrading.		WA, M	
93	Where demolition is involved disassemble all products with the minimum of disruption to their integrity.		WA	
94	Consider the provision of compost bins to encourage composting where appropriate. In larger developments where allotments or large areas of greenspace are planned, allocated space for community or on-site composting should be considered. Arrange access to brown bins for food and garden waste for all residential developments that aren't maintained by a landlord/factor. Space should be allocated for these facilities.		WA	
95	Ensure that the development is designed to comply with the requirements of the Waste (Scotland) Regulations 2012. Internal space within buildings or common areas for separation and storage of recyclables and/or food waste should be allocated. Adequate external space should also be provided and consideration given to how the containers will be accessed by the occupants and servicing vehicles. Consideration should be given to the siting of containers in order to avoid or reduce the need for the collection vehicles to reverse or turn. Reference should be made to BS 5906:2005 Waste management in buildings (BSI 2005) and Making space for waste: Designing Waste Management in New Developments. A Practical Guide for Developers and Local Authorities) (ADEPT, 2010). Consider use of smart sensors for collection regimes and environmental monitoring to maintain healthy conditions around these locations etc.		WA	
96	Provide and maintain protective fencing to prevent habitat damage as required during construction and post completion.		P, LU	
97	Restrict access to areas where disturbance might be caused to watercourses, for example disturbing breeding birds or causing pollution.		P, LU	