

BuildingFutures

Sustainable Design Toolkit

Education & Health



ENERGY & CLIMATE CHANGE | LANDSCAPE
& BIODIVERSITY | WATER | AIR | NOISE
MATERIALS & WASTE | DESIGN & SAFETY



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> Introduction

The Building Futures Partnership

Building Futures is an initiative run in partnership by Hertfordshire's eleven Local Planning Authorities with support from industry groups and stakeholders. Its purpose is to promote sustainable and high quality development through the planning system in Hertfordshire. It currently does this in three ways:

- Web based guidance for planners, designers, consultants and clients on sustainable design.
- Hertfordshire Building Futures Awards which promotes and rewards high quality and innovative development in the county.
- Hertfordshire Design Review Panel which provides independent and expert design review services for new development in Hertfordshire.

The Sustainable Design Toolkit

Development at all scales brings change to the environment we interact with and rely upon. This change has the capacity to make a sustainable and positive contribution, both today and over the lifetime of the development.

The Sustainable Design Toolkit has been developed by the Building Futures Partnership to improve the communication and understanding of sustainable design so that new development in Hertfordshire achieves sustainable and positive change.

The Sustainable Design Toolkit achieves this by providing a framework of questions and guidance to provoke thought at the early concept stage of development schemes, can structure design and pre-application discussions between stakeholders, and informs design decisions.

The Sustainable Design Toolkit has been shaped by dialogue with built environment professionals and stakeholders in Hertfordshire and the UK, including:

- Hertfordshire's eleven Local Planning Authorities
- Hertfordshire's Local Authority Building Control Group
- BRE Global
- Town and County Planning Association
- Herts & Beds Constructing Excellence Network
- University of Hertfordshire
- Hertfordshire Design Review Panel

The Sustainable Design Toolkit has also been widely consulted on to gain feedback from statutory consultees, the development industry, industry agencies and organisations, local civic and community groups, and other stakeholders.

Richard Thake, Executive Member Environment and Community Safety:

"The toolkit is an exciting addition to the Building Futures initiative and offers a simple framework of questions and engaging advice that places sustainable design and construction at the heart of new development in Hertfordshire. I would strongly advise those involved in bringing forward development in the county to use this valuable toolkit."



> Introduction

How to use the Sustainable Design Toolkit

The Sustainable Design Toolkit can be used at all stages of the design and planning process, as explained below. The Sustainable Design Toolkit should always be read and used alongside relevant national and local planning policy, and in conjunction with any relevant provisions, standards, targets or other requirements set out in policy and legislation.

Concept and pre-planning application stage:

Considering the whole range of sustainable design issues at the early stages of a development proposal, through an iterative and integrated design process, typically helps you achieve lasting sustainable development at similar cost.

The Sustainable Design Toolkit supports this by providing a simple yet methodical framework, together with objective and up-to-date design guidance that clients, applicants and the Local Planning Authority can refer to and use when preparing and discussing design solutions.

Planning application stage:

A clear and consistent method for demonstrating and assessing the sustainable design merits of development proposals is looked-for by both applicants and Local Planning Authorities.

The Sustainable Design Toolkit supports this by providing a simple PDF template that applicants can use to prepare a Sustainable Design Statement that covers all of the necessary design issues in a methodical and integrated fashion. The Sustainable Design Statement can then form part of a planning application (or brief at the early concept/pre-app stage), providing an explanation of the rationale behind the proposed design response.

A Sustainable Design Statement produced using the Sustainable Design Toolkit gives the Local Planning Authority confidence that the applicant has been made



aware of the breadth of sustainable design issues upfront and a level of confidence that relevant sustainable design issues have been considered. The Local Planning Authority can then review the Sustainable Design Statement alongside the guidance contained in the Sustainable Design Toolkit to determine whether those design issues have been adequately addressed, whether the applicant's design rationale is sound, and whether the proposed design solution is appropriate when considered alongside all relevant policies.

Construction stage:

The Sustainable Design Toolkit also contains guidance that project managers and contractors can use to ensure detrimental impacts are avoided or mitigated during the construction and post-completion phases of developments, for example on protecting and maintaining important habitats during and after construction.



> Design Aims & Outcomes





> Your Development Proposal

Project details

Please work through and complete all the relevant boxes and questions. Once you have completed all sections and relevant questions, click on the 'Save Sustainable Design Statement' button on the right to save a PDF statement which can be used during pre-application discussions or form part of your planning application. You can save this PDF at any time and return to it later.

**Save Sustainable
Design Statement**



Client name

Project name/reference

Agent name (if applicable)

Name of other agents/consultants (if applicable)

Address of project

Please provide a brief description of the development



> Your proposal

Sustainable Design Summary

Briefly summarise how your proposal will achieve the design aims and outcomes on page 4, outlining any key

constraints, and set out any alternative options that were discounted and the reasons why.



> Your proposal

Energy & Climate Change

Q1

How will energy demand for heating, lighting and cooling be avoided?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Energy & Climate Change solutions
www.hertslink.org/bfintranet/energy1/solutions

Climate Change Adaptation solutions
www.hertslink.org/bfintranet/climateadapt/18652826

CASE STUDIES:

Energy & Climate Change case studies
www.hertslink.org/bfintranet/energy1/casestud

Climate Change Adaptation case studies
www.hertslink.org/bfintranet/climateadapt/18652908

STANDARDS AND POLICY:

BREEAM: Construction Technical Standard
www.breeam.com

Building Regulations Parts F and L
www.planningportal.gov.uk

A Display Energy Certificate (DEC) is a mandatory requirement for all public buildings over 1,000 m² and must be displayed in a prominent place.
www.decc.gov.uk

Passivhaus and EnerPHit Refurbishment Standards & Certification Requirements
www.passivhaus.org.uk

DfE Building Bulletins: BB.79 Passive Solar Schools: A Design Guide BB.83 Schools' Environmental Assessment Method BB.87 Guidelines for Environmental Design in Schools BB.95 Schools for the future – designs for learning communities BB.101 Ventilation of School Buildings
www.gov.uk/government/organisations/department-for-education

OTHER RESOURCES:

Zero Carbon Hub - Fabric Energy Efficiency Standard
www.zerocarbonhub.org/

Glossary
www.hertslink.org/bfintranet/gloss



> Your proposal

Energy & Climate Change

Q2

What energy efficiency solutions will be used to further reduce energy demand in the new development?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Energy & Climate Change solutions
www.hertslink.org/bfintranet/energy1/solutions

Climate Change Adaptation solutions
www.hertslink.org/bfintranet/climateadapt/18652826

CASE STUDIES:

Energy & Climate Change case studies
www.hertslink.org/bfintranet/energy1/casestud

Climate Change Adaptation case studies
www.hertslink.org/bfintranet/climateadapt/18652908

STANDARDS AND POLICY:

BREEAM: Construction Technical Standard
www.breeam.com

Building Regulations Parts F, J and L
www.planningportal.gov.uk

A Display Energy Certificate (DEC) is a mandatory requirement for all public buildings over 1,000 m² and must be displayed in a prominent place.
www.decc.gov.uk

DfE Building Bulletins: BB.83 Schools' Environmental Assessment Method BB.87 Guidelines for Environmental Design in Schools BB.95 Schools for the future – designs for learning communities BB.98 Briefing Framework for Secondary School Projects BB.99 Briefing Framework for Primary School Projects BB.101 Ventilation of School Buildings
www.gov.uk/government/organisations/department-for-education

OTHER RESOURCES:

Zero Carbon Hub - Fabric Energy Efficiency Standard
www.zerocarbonhub.org

The Energy Saving Trust Recommended Label
www.energysavingtrust.org.uk

Glossary
www.hertslink.org/bfintranet/gloss



> Your proposal

Q3

Energy & Climate Change

Where relevant, how will renewable and low carbon energy technologies be integrated into the new development?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Energy & Climate Change solutions
www.hertslink.org/bfintranet/energy1/solutions

CASE STUDIES:

Energy & Climate Change case studies
www.hertslink.org/bfintranet/energy1/casestud

STANDARDS AND POLICY:

Building Regulations Part J
www.planningportal.gov.uk

BREEAM: Construction Technical Standard
www.breeam.com

DfE Building Bulletins: BB.83 Schools' Environmental Assessment Method, BB.87 Guidelines for Environmental Design in Schools BB.95 Schools for the future – designs for learning communities BB.95 Schools for the future – designs for learning communities BB.98 Briefing Framework for Secondary School Projects BB.99 Briefing Framework for Primary School Projects BB.101 Ventilation of School Buildings
www.gov.uk/government/organisations/departments-for-education

Environmental Programmes including the Domestic renewable Heat Incentive (RHI) and Feed-in-Tariff (FIT)
www.ofgem.gov.uk

Microgeneration Certification Scheme
www.microgenerationcertification.org

OTHER RESOURCES:

Compare Renewables
www.local.gov.uk

Zero Carbon Hub
www.zerocarbonhub.org

National Biofuel Supply Database
www.woodfueldirectory.org

Glossary
www.hertslink.org/bfintranet/gloss



> Your proposal

Energy & Climate Change

Q4

How will the building be resilient to climate change and reduce its contribution to overheating?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Climate Change Adaptation solutions
www.hertslink.org/bfintranet/climateadapt/18652826

Energy & Climate Change solutions
www.hertslink.org/bfintranet/energy1/solutions

Landscape & Biodiversity solutions:
www.hertslink.org/bfintranet/landbio/18653222

Materials solutions:
www.hertslink.org/bfintranet/materials1/solutions

CASE STUDIES:

Climate Change Adaptation case studies:
www.hertslink.org/bfintranet/climateadapt/18652908

Energy & Climate Change case studies
www.hertslink.org/bfintranet/energy1/casestud

STANDARDS AND POLICY:

BREEAM: Construction Technical Standard
www.breeam.com

DfE Building Bulletins BB.79 Passive Solar Schools: A Design Guide BB.83 Schools' Environmental Assessment Method, 1996 BB.87 Guidelines for Environmental Design in Schools BB.95 Schools for the future – designs for learning communities BB.98 Briefing Framework for Secondary School Projects BB.99 Briefing Framework for Primary School Projects BB.101 Ventilation of School Buildings 2006
www.gov.uk/government/organisations/department-for-education

OTHER RESOURCES:

The Green Roof Code
www.greenroofcode.co.uk

Living Roofs
livingroofs.org

UK Rain Gardens Guide
www.raingardens.info

Glossary
www.hertslink.org/bfintranet/gloss



> Your proposal

Landscape & Biodiversity

Q1

What measures will be taken to create, protect and enhance existing landscape features and habitats?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Landscape & Biodiversity solutions:

www.hertslink.org/bfintranet/landbio/18653222

STANDARDS AND POLICY:

GreenArc Strategic Green Infrastructure Plan

www.hertfordshire.gov.uk/docs/pdf/s/SHiP.pdf

Conservation of Habitats and Species Regulations 2010 When dealing with cases where a European Protected Species may be affected, the planning authority has a statutory duty under the Habitats Regulations to have regard to the requirements of the Habitats Directive, and the three tests that it sets out:

- the activity or development must be for reasons of overriding public interest or for public health and safety;
- there must be no satisfactory alternative;
- favourable conservation status of the species must be maintained.

www.naturalengland.org.uk

British Standard 5837:2012 Trees in relation to design, demolition and construction

shop.bsigroup.com

British Standard 3998: 2010 Recommendations for Tree Work – Best practice for arboricultural/tree surgery works.

shop.bsigroup.com

DfE Building Bulletins: BB.28 Playing Fields and Hard Surface Areas BB.71 The Outdoor Classroom – educational use, landscape design and management of school grounds BB.85 School Grounds – A guide to Good Practice BB.95 Schools for the future – designs for learning communities BB.98 Briefing Framework for Secondary School Projects BB.99 Briefing Framework for Primary School Projects

British Standard 3998: 2010 Recommendations for Tree Work – Best practice for arboricultural/tree surgery works.

www.gov.uk/government/organisations/department-for-education

Trees can be protected by Tree Preservation Orders (TPO), Conservation Areas (CA), Planning Conditions or restrictive covenants. Where it is proposed to carry out works to trees covered by a TPO or CA notice must be given to the Local Planning Authority. Failure to protect hedgerows and trees can result in significant fines - up to £20,000 per tree.

OTHER RESOURCES:

Hertfordshire Landscape Character Area Statements

www.hertfordshire.gov.uk/services/leisure/heritage1/landscape/hlca/lcacoll/

National Character Areas

www.naturalengland.org.uk

Planning for a healthy environment: good practice for green infrastructure and biodiversity, TCPA

www.tcpa.org.uk/data/files/TCPA_TWT_GI-Biodiversity-Guide.pdf

Planning for Biodiversity Toolkit

www.biodiversityplanningtoolkit.com/

Green Roof Code

www.greenroofcode.co.uk

Living Roofs

livingroofs.org

UK Rain Gardens Guide

www.raingardens.info

CIEEM professional directory of ecological consultants

www.cieem.net/members-directory

Landscape Institute's database of landscape practices

www.landscapeinstitute.co.uk/registeredpractices/search.php

Glossary

www.hertslink.org/bfintranet/gloss



> Your proposal

Q2

Landscape & Biodiversity

How will any impacts on landscape and biodiversity be avoided or mitigated?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

A standard hierarchy of mitigation consists of the stages below. Not all impacts can be mitigated, and mitigation itself can lead to problems. Monitoring is essential to identify and overcome and unanticipated problems as they arise.

1. Avoidance - achieved through careful site selection, siting and innovative design
2. Reduction - achieved by setting the development into the ground and the implementation of sensitive design
3. Remediation - used where either Avoidance or Reduction cannot be achieved, e.g. replanting and screening
4. All developments should seek to achieve net gains for nature, and as a minimum result in a zero net loss of biodiversity

Landscape & Biodiversity solutions:

www.hertslink.org/bfintranet/landbio/18653222

CASE STUDIES:

Energy & Climate Change case studies

www.hertslink.org/bfintranet/energy1/casestud

STANDARDS AND POLICY:

GreenArc Strategic Green Infrastructure Plan

www.hertfordshire.gov.uk/docs/pdf/s/SHiP.pdf

Conservation of Habitats and Species Regulations 2010 When dealing with cases where a European Protected Species may be affected, the planning authority has a statutory duty under the Habitats Regulations to have regard to the requirements of the Habitats Directive, and the three tests that it sets out:

- the activity or development must be for imperative reasons of overriding public interest or for public health and safety;
- there must be no satisfactory alternative;
- favourable conservation status of the species must be maintained.

www.naturalengland.org.uk

British Standard 5837:2012 Trees in relation to design, demolition and construction

British Standard 3998: 2010 Recommendations for Tree Work – Best practice for arboricultural/tree surgery works.
shop.bsigroup.com

Trees can be protected by Tree Preservation Orders (TPO), Conservation Areas (CA), Planning Conditions or restrictive covenants. Where it is proposed to carry out works to trees covered by a TPO or CA notice must be given to the Local Planning Authority. Failure to protect hedgerows and trees can result in significant fines - up to £20,000 per tree.

OTHER RESOURCES:

Hertfordshire Design Review Panel

www.hertslink.org/buildingfutures/designreview

Hertfordshire Landscape Character Area Statements

www.hertfordshire.gov.uk/services/leisureculture/heritage1/landscape/hlca/lcacoll

National Character Areas

www.naturalengland.org.uk

Planning for a healthy environment: good practice for green infrastructure and biodiversity, TCPA

www.tcpa.org.uk/data/files/TCPA_TWT_GI-Biodiversity-Guide.pdf

Planning for Biodiversity Toolkit

www.biodiversityplanningtoolkit.com

Green Roof Code

www.greenroofcode.co.uk

Living Roofs

www.ivingroofs.org

UK Rain Gardens Guide

www.raingardens.info

CIEEM professional directory of ecological consultants

www.cieem.net/members-directory

Landscape Institutes database of landscape practices

www.landscapeinstitute.co.uk/registeredpractices/search.php

Glossary

www.hertslink.org/bfintranet/gloss



> Your proposal

Landscape & Biodiversity

Q3

How will the risks of ground instability due to climate change be managed?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Landscape & Biodiversity solutions
www.hertslink.org/bfintranet/landbio/18653222

Climate Change Adaptation solutions
www.hertslink.org/bfintranet/climateadapt/18652826

Water solutions
www.hertslink.org/bfintranet/water1/solutions

CASE STUDIES:

Climate Change Adaptation case studies
www.hertslink.org/bfintranet/climateadapt/18652908

Water case studies
www.hertslink.org/bfintranet/water1/casestud

STANDARDS AND POLICY:

Building Regulations Part A
www.planningportal.gov.uk

OTHER RESOURCES:

Glossary
www.hertslink.org/bfintranet/gloss



> Your proposal

Water

Q1

How will the consumption of water be reduced?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Water solutions

www.hertslink.org/bfintranet/water1/solutions

Climate Change Adaptation solutions

www.hertslink.org/bfintranet/climateadapt/18652826

CASE STUDIES:

Water case studies

www.hertslink.org/bfintranet/water1/casestud

Climate Change Adaptation case studies

www.hertslink.org/bfintranet/climateadapt/18652908

STANDARDS AND POLICY:

BREEAM: Construction Technical Standard

www.breeam.com

Building Regulations Part G

www.planningportal.gov.uk

Water Supply (Water Fittings)

Regulations 1999 - minimum levels of water efficiency performance for water-using appliances
www.defra.gov.uk

DfE Building Bulletins: BB. 83

Schools' Environmental Assessment Method, 1996 BB. 87 Guidelines for Environmental Design in Schools BB. 95 Schools for the future – designs for learning communities 2002

www.gov.uk/government/organisations/department-for-education

OTHER RESOURCES:

Waterwise focuses on reducing water waste in the UK

www.waterwise.org.uk

The Water Calculator

www.thewatercalculator.org.uk

Glossary

www.hertslink.org/bfintranet/gloss



> Your proposal

Water

Q2

How will surface water runoff from the building be managed sustainably to manage the risk of flooding and maintain water quality?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Water solutions

www.hertslink.org/bfintranet/water1/solutions

Climate Change Adaptation solutions

www.hertslink.org/bfintranet/climateadapt/18652826

Landscape & Biodiversity solutions:

www.hertslink.org/bfintranet/landbio/18653222

CASE STUDIES:

Water case studies

www.hertslink.org/bfintranet/water1/casestud

Climate Change Adaptation case studies

www.hertslink.org/bfintranet/climateadapt/18652908

STANDARDS AND POLICY:

BREEAM: Construction Technical Standard

www.breeam.com

The Lead Local Flood Authority (Hertfordshire County Council) is a statutory consultee in planning for all major development in relation to the management of surface water drainage.
www.hertfordshire.gov.uk

Flood Risk Assessments (FRA) may be required in accordance with the UK Government's policy on development and flood risk as stated in the National Planning Policy Framework (NPPF) The EU Water Framework Directive (WFD) takes an ecosystems approach to protecting and enhancing the quality of surface freshwater (lakes, rivers and streams), groundwater, coastal waters out to one mile. The Environment Agency is the lead authority for delivering the WFD in England and Wales.

www.environment-agency.gov.uk

DfE Building Bulletins: BB. 83 Schools' Environmental Assessment Method, 1996 BB. 87 Guidelines for Environmental Design in Schools BB. 95 Schools for the future – designs for learning communities 2002

www.gov.uk/government/organisations/department-for-education

OTHER RESOURCES:

CIRIA SuDS Manual and other Susdrain resources

www.susdrain.org

The Green Roof Code

www.greenroofcode.co.uk

Living Roofs

livingroofs.org

UK Rain Garden Guide

www.raingardens.info

Glossary

www.hertslink.org/bfintranet/gloss



> Your proposal

Air

Q1

How will air pollutants, dust and other emissions arising from construction be minimised?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Air solutions

www.hertslink.org/bfintranet/air1/solutions

CASE STUDIES:

Air case studies

www.hertslink.org/bfintranet/air1/casestud

STANDARDS AND POLICY:

Considerate Constructors Scheme

www.ccscheme.org.uk

OTHER RESOURCES:

Glossary

www.hertslink.org/bfintranet/gloss



> Your proposal

Air

Q2

How will good internal air quality be achieved?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Air solutions

www.hertslink.org/bfintranet/air1/solutions

CASE STUDIES:

Air case studies

www.hertslink.org/bfintranet/air1/casestud

STANDARDS AND POLICY:

Building Regulations Part F

www.planningportal.gov.uk

*DfE Building Bulletins: BB.83
Schools' Environmental Assessment
Method, 1996 BB.87 Guidelines for
Environmental Design in Schools BB.98
Briefing Framework for Secondary
School Projects BB.99 Briefing
Framework for Primary School Projects
BB.101 Ventilation of School Buildings*
[www.gov.uk/government/organisations/
department-for-education](http://www.gov.uk/government/organisations/department-for-education)

OTHER RESOURCES:

BRE Green Guide to Specification
www.bre.co.uk/greenguide

*BRE certification of products based on
the EU Construction Products Directive
(CPD) requirements*
www.bre.co.uk

Glossary

www.hertslink.org/bfintranet/gloss



> Your proposal

Noise

Q1

How will construction noise be minimised?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Noise Solutions
www.hertslink.org/bfintranet/noise1/solutionsland

CASE STUDIES:

Noise case studies
www.hertslink.org/bfintranet/noise1/cases

OTHER RESOURCES:

Code of Considerate Practice
www.ccscheme.org.uk

Glossary
www.hertslink.org/bfintranet/gloss



> Your proposal

Noise

Q2

What noise attenuation measures will be incorporated into the design of the new building(s)?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Noise solutions
www.hertslink.org/bfintranet/noise1/solutionsland

CASE STUDIES:

Noise case studies
www.hertslink.org/bfintranet/noise1/cases

STANDARDS AND POLICY:

BREEAM: Construction Technical Standard
www.breeam.com

Building Regulations Part E
www.planningportal.gov.uk

Part E Robust Details scheme - an alternative to complying with Building Regulations Part E Requirement E1.
www.robustdetails.com

DfE Building Bulletins: BB. 83 Schools' Environmental Assessment Method, 1996 BB. 87 Guidelines for Environmental Design in Schools BB. 93 Acoustic Design of Schools, A Design Guide BB. 98 Briefing Framework for Secondary School Projects BB. 99 Briefing Framework for Primary School Projects
www.gov.uk/government/organisations/department-for-education

OTHER RESOURCES:

ANC Schools Testing Good Practice Guide and other specialist noise advice
www.association-of-noise-consultants.co.uk

Roads in Hertfordshire - Highway Design Guide
www.hertfordshire.gov.uk

Green Roof Code
www.greenroofcode.co.uk

Living Roofs
www.livingroofs.org

Glossary
www.hertslink.org/bfintranet/gloss



> Your proposal

Materials & Waste

Q1

What sustainable materials will be used?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Materials solutions

www.hertslink.org/bfintranet/materials1/solutions

Waste solutions

www.hertslink.org/bfintranet/waste1/solutionsland

CASE STUDIES:

Materials case studies

www.hertslink.org/bfintranet/materials1/caseland

Waste case studies

www.hertslink.org/bfintranet/waste1/casestud

STANDARDS AND POLICY:

BREEAM: Construction Technical Standard

www.breeam.com

DfE Building Bulletins: BB.83

Schools' Environmental Assessment Method, 1996 BB.87 Guidelines for Environmental Design in Schools BB.98 Briefing Framework for Secondary School Projects BB.99 Briefing Framework for Primary School Projects
www.gov.uk/government/organisations/department-for-education

The Whole Life Performance of a material is the performance of a material (or building) over a defined period of time. Typically building performance is measured over 60 years. Whole life performance takes into account capital costs; maintenance, replacement and repair costs; facilities management costs and disposal costs.
www.bre.co.uk

OTHER RESOURCES:

Methodology to calculate embodied carbon of materials, 1st edition, RICS
www.rics.org/uk/

BRE Green Guide to Specification
www.bre.co.uk/greenguide

WRAP

www.wrap.org.uk

The Forest Stewardship Council (FSC)
www.fsc-uk.org

Programme for the Endorsement of Forest Certification schemes
www.pefc.org

Glossary

www.hertslink.org/bfintranet/gloss



> Your proposal

Materials & Waste

Q2

How will the waste hierarchy be embedded into the development's construction and operation?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Materials solutions

www.hertslink.org/bfintranet/materials1/solutions

Waste solutions

www.hertslink.org/bfintranet/waste1/solutionsland

CASE STUDIES:

Materials case studies

www.hertslink.org/bfintranet/materials1/caseland

Waste case studies

www.hertslink.org/bfintranet/waste1/casestud

STANDARDS AND POLICY:

BREEAM: Construction Technical Standard

www.breeam.com

Building Regulations Part M

www.planningportal.gov.uk

DfE Building Bulletins: BB.83

Schools' Environmental Assessment Method, 1996 BB.87 Guidelines for Environmental Design in Schools

www.gov.uk/government/organisations/department-for-education

Code of Considerate Practice

www.ccscheme.org.uk

OTHER RESOURCES:

WRAP

www.wrap.org.uk

National Industry Symbiosis Programme

www.nispnetwork.com/

Hertfordshire Materials Exchange

www.eastex.org.uk/herts/search_a.asp

Site Waste Management Plans

www.wrap.org.uk/content/site-waste-management-plans-1

Environmental Product Declarations provide a summary of the environmental impact (or lifecycle assessment) of construction materials and products.

www.bre.co.uk/page.jsp?id=1578

Hertfordshire Waste Aware – household waste recycling and waste collection info

www.wasteaware.org.uk

Glossary

www.hertslink.org/bfintranet/gloss



> Your proposal

Design & Safety

Q1

How will the design of the development contribute to place making?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Design solutions
www.hertslink.org/bfintranet/designs

CASE STUDIES:

Design case studies
www.hertslink.org/bfintranet/designs/18652972

STANDARDS AND POLICY:

National Planning Policy Framework
www.gov.uk/government/publications/national-planning-policy-framework--2

Design and Access Statements requirements
www.planningportal.gov.uk

DofE Building Bulletins: BB.98 Briefing Framework for Secondary School Projects BB.99 Briefing Framework for Primary School Projects BB.95 Schools for the future – designs for learning communities
www.gov.uk/government/organisations/department-for-education

OTHER RESOURCES:

Hertfordshire Design Review Panel
www.hertslink.org/buildingfutures/designreview

Schools for the Future: Designing School Grounds
www.gov.uk/government/publications/school-grounds-and-outdoor-space

Historic England: Planning
www.historicengland.org.uk

Roads in Hertfordshire - Highway Design Guide
www.hertfordshire.gov.uk

Glossary
www.hertslink.org/bfintranet/gloss



> Your proposal

Design & Safety

Q2

How could the site and building(s) be adapted to different uses during its lifetime?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Design solutions
www.hertslink.org/bfintranet/designs

CASE STUDIES:

Design case studies
www.hertslink.org/bfintranet/designs/18652972

STANDARDS AND POLICY:

The Equality Act 2010 widens the test that focuses on whether a physical feature makes it 'impossible or unduly difficult' for a disabled person to use a service.

www.legislation.gov.uk/ukpga/2010/15/contents

Building Regulations Part M
www.planningportal.gov.uk

DfE Building Bulletins: BB.64 Adaptable facilities in further education for business and office studies BB.65 Adaptable teaching kitchens in further education BB.66 Adaptable facilities in further education for accommodation studies BB.70 Maintenance and renewal in educational buildings – maintenance of mechanical services BB.76 Maintenance and Renewal in Educational Buildings: Maintenance of Electrical Services 1992 BB.98 Briefing Framework for Secondary School Projects BB.99 Briefing Framework for Primary School Projects BB.102 Designing for disabled children and children with special educational needs BB.95 Schools for the future – designs for learning communities BB.96 Meeting the educational needs for children and young people in hospital – design guide.
www.gov.uk/government/organisations/department-for-education

OTHER RESOURCES:

Hertfordshire Design Review Panel
www.hertslink.org/buildingfutures/designreview

DfE Exemplar Designs for Schools
www.gov.uk/government/publications/school-grounds-and-outdoor-space

New from Old: transforming secondary schools through refurbishment
www.designcouncil.org.uk/resources/guide/new-old

Glossary
www.hertslink.org/bfintranet/gloss



> Your proposal

Design & Safety

Q3

How will the design promote inclusivity, security and safety?

Describe your proposed design solution and explain the rationale for it. Please also outline any alternative solutions that have been considered but were discounted and the reasons why.

► Refer to Advice & Guidance

FURTHER INFORMATION

MORE ON SOLUTIONS:

Design solutions

www.hertslink.org/bfintranet/designs

Safety solutions

www.hertslink.org/bfintranet/safety1

CASE STUDIES:

Design case studies

www.hertslink.org/bfintranet/designs/18652972

Safety case studies

www.hertslink.org/bfintranet/safety1/case

STANDARDS AND POLICY:

Building Regulations Part Q

www.planningportal.gov.uk

DfE Building Bulletins: BB.67 Crime

prevention in schools – practical guidance BB.69 Crime Prevention in Schools, Specification, Installation and Maintenance of Intruder Alarm Systems BB.75 Crime Prevention in Schools – Closed Circuit TV Surveillance Systems in educational buildings BB.78 Security Lighting – Crime Prevention in Schools BB.90 Lighting Design for Schools BB.98 Briefing Framework for Secondary School Projects BB.99 Briefing Framework for Primary School Projects BB.100 Fire Safety Design Guidance www.gov.uk/government/organisations/departments-for-education

Hertfordshire's Sustainable Modes of Travel Strategy for Schools and Colleges www.hertfordshire.gov.uk

OTHER RESOURCES:

Hertfordshire Design Review Panel

www.hertslink.org/buildingfutures/designreview

Hertfordshire's Travel Strategy

www.hertfordshire.gov.uk/docs/pdf/a/ATS2013.pdf

Secured by Design is a crime prevention initiative from the UK Association of Chief Police Officers (ACPO).

www.securedbydesign.com

Glossary

www.hertslink.org/bfintranet/gloss



> Next Steps

That's it! All done.

Thank you for considering and responding to the above questions.

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Print your responses

Click here to print only the relevant pages of this document (Pages 5-24).



Print full document

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> Examples, Solutions & Advice

Energy & Climate Change

Q1

How will energy demand for heating, lighting and cooling be avoided?

◀ View your response to this question

Advice and Guidance

- 1 A high level of insulation and thermal mass can help maintain a stable and comfortable internal temperature during periods of very hot and cold weather.
- 2 An air tight building envelope coupled with an appropriate passive ventilation strategy and appropriate design and control of air entering and leaving the building through access doors, will help to reduce air leakage and heat loss.
- 3 Maximise passive solar gain and natural lighting by orientating the main façades within 30 degrees of South, placing rooms requiring most heating and lighting on the southern façade, and make use of glazing, skylights, sun catchers and sun pipes to bring light into deeper parts of the building.
- 4 Balance passive solar gain with solar shading and cooling to avoid overheating, particularly in southerly or extensively glazed rooms, and spaces used by vulnerable groups, for example elderly and infants – deciduous trees and bushes, brise soleil, louvers, overhanging eaves, canopies, phase change materials and heat pumps can be effective.
- 5 Avoid designing predominately west-facing rooms in continuous use as the afternoon solar gain adds to the internal heat gains accumulated throughout the day making it more difficult to keep the space at a comfortable temperature.
- 6 Use double or triple glazed windows - inert gas filled (such as argon), solar control technology, heat reflecting films and other additional options now exist to further improve the efficiency and performance of glazing.
- 7 Provide training and awareness programmes for facilities staff and occupiers of the building on any technologies they will come into contact with. If a technology or system will be complicated or costly to use then it is likely to be inappropriate.
- 8 Information boards and electronic displays will generate interest and incentivise sustainable behaviours.



> Examples, Solutions & Advice

Energy & Climate Change

Q2

What energy efficiency solutions will be used to further reduce energy demand in the new development?

◀ View your response to this question

Advice and Guidance

- 1 A Building Management System will automatically control lighting, heating and cooling services in the most energy efficient way. It will help occupiers monitor their energy use and highlight energy intensive areas or times of the day, and seasonal variations in energy demand.
- 2 Use energy sub-meters for space heating, hot water, mechanical cooling, lighting, and other major energy consuming uses or items.
- 3 Energy efficient internal and external lighting with appropriate controls should be used.
- 4 Ensure white goods are AA or A+++ rated.
- 5 Mechanical Ventilation with Heat Recovery systems should be pursued when passive ventilation is not feasible or appropriate. Other heat recovery technologies can be integrated into services such as air conditioning (if necessary), waste water and refrigeration.
- 6 If using gas for space heating and hot water, ensure boilers are high efficiency and have appropriate controls linked to any BMS that is in use.



> Examples, Solutions & Advice

Energy & Climate Change

Q3

Where relevant, how will renewable and low carbon energy technologies be integrated into the new development?

◀ View your response to this question

Advice and Guidance

- 1 Solar Thermal Panels: Freestanding or integrated, ideally SE to SW facing at 30-45 degrees. Suitable for high usages of hot water, but back-up supply is also needed. Evacuated tube panels are generally more costly but more efficient.
- 2 Solar Photovoltaic Panels: Freestanding or integrated into SE to SW facing roofs 30-45 degrees, converting solar energy into electricity.
- 3 Ground Source Heat Pump: Thermal ground energy is captured for space heating and hot water. They are best suited to underfloor heating or low temperature systems, and can be used to provide cooling during summer months. Require sites with enough open land, e.g. car parks, parks/playgrounds and fields.
- 4 Air Source Heat Pump: Converts low grade energy from the air outside the building into higher grade energy to use for space heating inside.
- 5 Biomass Boilers: Burn wood and other biomass products in the form of logs, pellets or chips. Considered to be carbon neutral. The sourcing of fuel, and the provision of storage space and suitable access, should be considered carefully if the technology is to be appropriate and sustainable. The appliance will need to meet the requirements of any designated smoke control zone.
- 6 Combined Heat and Power: Uses natural gas or biomass to provide heating, hot water or electricity. Significant space is needed for plant and fuel storage if using biomass. They are best suited to community heating systems where they are run at full capacity continuously and heat generated during periods of low demand is exported to other users to avoid 'dumping' it into the external environment and contributing to external overheating.



> Examples, Solutions & Advice

Energy & Climate Change

Q4

How will the building be resilient to climate change and reduce its contribution to overheating?

◀ View your response to this question

Advice and Guidance

- 1 Use robust and water resilient external finishes on façades which can reflect or reduce the absorption of solar energy (e.g. white render and light paint colours).
- 2 Use oversized eaves and shading devices to provide solar shading. Oversized eaves and guttering can also protect windows and façades from heavy precipitation.
- 3 Green roofs or walls can reduce the cooling load of a building. Green roofs can also create potential amenity and functional space in tight sites with limited outdoor space at ground level.
- 4 Deciduous trees and mature soft landscaping around the building will provide shading for occupiers and building façades during the summer, and shelter from storms during winter.
- 5 Balance areas of hard surfacing with green and blue space/features to provide cooling during the summer as well as habitat for local biodiversity, valued outdoor teaching space, and comfortable amenity space for vulnerable groups.



> Examples, Solutions & Advice

Landscape & Biodiversity

Q1

What measures will be taken to create, protect and enhance existing landscape features and habitats?

◀ View your response to this question

Advice and Guidance

- 1 During construction, arrange site access to avoid loss or detrimental impact on key landscape features and habitats.
- 2 During construction, provide appropriate screening or temporary landscaping to minimise noise, air and light pollution and physical impacts on the surrounding landscape and habitats.
- 3 If the site is home to protected species, such as Great Crested Newts, then special measures and requirements may need to be fulfilled. Contact your local planning department for advice.
- 4 Ecological surveys should be undertaken to inform the design, phasing and construction management of the development. Surveys will identify the ecological characteristics and what mitigation and enhancement solutions will be required to maintain or improve the ecological value of the site and surrounding area. Surveys must be carried out by a qualified professional who is a member of the Institute of Ecology and Environmental Management (IEEM) or have equivalent qualifications.
- 5 External lighting within or adjacent to green spaces and should be avoided or minimised where there are sensitive species and habitats such as bats.
- 6 Maintain valued public views from, through and to surrounding landscapes, streetscapes and townscape.
- 7 Integrate nesting, roosting and hibernating boxes/spaces into the design of the building, as informed by the ecological survey.
- 8 Integrate green roofs planted with native grasses and wildflower species.
- 9 The master plan for the site should enable future expansion of the building and site in tandem with ongoing protection of important landscape features and habitats.
- 10 Agree Landscape and Habitat Management Plans covering detailed annual management and maintenance roles, responsibilities and actions for open and green spaces.
- 11 Create areas of new habitat that reflect the surrounding natural environment, such as species-rich grassland, hedgerows and native tree planting, and water features. They should be designed to provide stepping stones linking nearby habitats, a mix of open and enclosed spaces and microclimates, and serve as screening to help the development sit comfortably within its surroundings.
- 12 Provide on-site information boards for users that describe the makeup of green space and the benefits they provide, a code of conduct for using those spaces (e.g. not to disturb certain sensitive areas or planting), and how and why green spaces are maintained (e.g. segregates areas and mowing regimes). Green spaces within health and education facilities can improve people's wellbeing and support learning, e.g. about our environment and food.
- 13 Phase and carry out works around seasonal patterns such as nesting, mating, foraging and hibernation which would have been identified via an ecological survey.



> Examples, Solutions & Advice

Landscape & Biodiversity

Q2

How will any impacts on landscape and biodiversity be avoided or mitigated?

◀ View your response to this question

Advice and Guidance

- 1 Ensure on-site identification and appropriate protection of trees and habitats within the site, or temporary relocation of habitats such as wild flower rich grassland, is carried out prior to construction works.
- 2 Retain and store topsoil removed from the site, then reuse where possible to ensure habitat continuity for local species.
- 3 Small, mixed composition, vertically complex and well sited soft landscaping schemes on smaller tight sites can create valuable habitat and biodiversity gains.
- 4 Create new landforms to protect visual amenity and help integrate the development into the wider landscape.
- 5 Incorporate appropriate buffer zones, screening, fencing and boundary treatments that are in keeping with the surrounding area to protect visual amenity, mitigate harmful impacts on adjacent habitats and the wider landscape, and to provide attractive boundaries or 'edges'.
- 6 Retain and protect existing landscape features and habitats, such as individual standard trees, hedgerows and tree belts, and natural water features (e.g. ponds and ditches).

Q3

How will the risks of ground instability due to climate change be managed?

◀ View your response to this question

Advice and Guidance

- 1 Heavier foundations - foundations should be strong and extend deep enough below the zone in which seasonal variations in moisture content can be withstood.
- 2 Reinforcing slopes or building retaining walls to prevent or reduce landslip.
- 3 Appropriate vegetation can help to prevent soil erosion through their root network, helping to stabilise ground conditions for buildings.



> Examples, Solutions & Advice

Water

Q1

How will the consumption of water be reduced?

◀ View your response to this question

Advice and Guidance

- 1 Install flow regulated or auto stop taps, waterless urinals and dual/low volume flush toilets - if using traditional urinals you can incorporate sensors to manage flushing sustainably.
- 2 Use water-efficient showerheads that can produce water flows that feel far higher than they actually are.
- 3 Leak detection systems which monitor mains water supply to buildings and sites can drastically reduce wastage of mains water through underground leakages.
- 4 Extensive roof areas and guttering provide opportunities for green roofs and rainwater harvesting to supply free water for flushing, washing and irrigation.
- 5 Greywater recycling systems which capture and treat waste water from wash basins, dishwashers and other appliances can also be used to provide recycled water for flushing and irrigation.
- 6 Design landscaped areas using drought tolerant plants.
- 7 Ensure new white goods are water efficient. Look for appliances with the Water Efficient Product Label - the Waterwise Marque.
- 8 Sub-metering of mains water as well as grey/rainwater systems, connected to a Building Management System if possible, will allow monitoring of water consumption and further incentivise the efficient use of water.



> Examples, Solutions & Advice

Water

Q2

How will surface water runoff from the building be managed sustainably to manage the risk of flooding and maintain water quality?

◀ View your response to this question

Advice and Guidance

- 1 Rainwater harvesting tanks and water butts can reduce the amount of water flowing into drains and provide water for washing, flushing and irrigation.
- 2 Permeable paving and landscaping (e.g. grass strips, gravel or permeable tarmac instead of concrete driveways) will provide natural drainage and deter soil erosion.
- 3 Green roofs and walls will help attenuate storm water run-off in flatted or site constrained developments.
- 4 Appropriate planting to provide natural drainage and deter soil erosion.
- 5 Engineered underground flood storage, for example underneath car parks and play grounds, or temporary flood storage areas, such as playing fields may be suitable if non-engineered solutions such as swales and natural filter strips are inappropriate, or the site is too small. Use of playing fields as temporary flood storage must be balanced with the need for adequate sport and play provision.
- 6 Oil interceptors or separators can be used to capture polluted run off from driveways and the highway before it is convey to watercourses.
- 7 Filter strips are gently sloping vegetated areas that treat runoff from adjacent impermeable areas, such as roads and footways.
- 8 Bioretention areas collect and treat water runoff before discharging it downstream or allowing infiltration to the ground below.
- 9 Infiltration basins are shallow depressions in grassy or lightly vegetated areas designed to store runoff temporarily until it infiltrates into the ground below.
- 10 Detention basins are shallow dry depressions that store water runoff for a specific duration. They are typically designed to accept additional water runoff during intense storms and to provide habitat for biodiversity.
- 11 Filter drains are deep narrow channels filled with permeable materials that filter and convey runoff to other parts of a SuDS scheme, and can be designed to allow infiltration into the ground below (infiltration trenches).
- 12 Swales are broad, shallow and grassy channels that convey or store water runoff, or allow water to infiltrate into the ground below.



> Examples, Solutions & Advice

Air

Q1

How will air pollutants, dust and other emissions arising from construction be minimised?

◀ View your response to this question

Advice and Guidance

- 1 Wheel washing all vehicles, and dampening and sweeping roadways.
- 2 Covering vehicles and skips when loaded with material.
- 3 Dampening stock piles, and locating them to take account of the prevailing wind and sensitive receptors.
- 4 Sealing and replanting completed earthworks as early as practicable to reduce dust.
- 5 Using low emission vehicles and plant equipment (particularly on site generators).

Q2

How will good internal air quality be achieved?

◀ View your response to this question

Advice and Guidance

- 1 Use low VOC emitting materials and products, such as water or vegetable oil based paints, linoleum, and carpet made of natural materials (e.g. seagrass or wool).
- 2 Young children, elderly and physically vulnerable people are particularly sensitive to the adverse effects of synthetic air borne compounds such as Volatile Organic Compounds (VOCs) and formaldehyde. These can cause breathing problems and create or contribute to a 'sick building syndrome'.
- 3 Use furnishings made from solid wood instead of pressed or reconstituted wood, which are often bound with chemicals such as formaldehyde.
- 4 An appropriate ventilation strategy, whether passive (e.g. cross or stack ventilation) or mechanical, and the siting of outdoor rooms and external spaces should take into account neighbouring land uses as potential sources of air and noise pollution, such as industrial parks, busy roads and security considerations. If the ventilation strategy is dependent upon open windows then security and safety should not be compromised as a result.



> Examples, Solutions & Advice

Noise

Q1

How will construction noise be minimised?

◀ View your response to this question

Advice and Guidance

- 1 Avoid site drilling wherever possible.
- 2 Keep site grinding, cutting and similar noisy activities to a minimum, and at appropriate times of the day.
- 3 Avoid vibro-compaction of the ground as much as possible.
- 4 Consider the use off-site manufacturing where possible, such as the cutting of non standard concrete blocks off site under controlled conditions.
- 5 Timing of deliveries should avoid conflict with existing users of the site, for example drop off and pick up times of pupils.

Q2

What noise attenuation measures will be incorporated into the design of the new building(s)?

◀ View your response to this question

Advice and Guidance

- 1 Use sound resistant flooring and walling systems.
- 2 Thicker, heavier doors and double glazed windows will provide greater noise insulation.
- 3 Separate noise sensitive areas away from external and internal noise sources by the greatest distance possible.
- 4 Provide sound proofing for noise generating areas, e.g. plant rooms, reception areas, utility rooms and workshops to reduce noise disturbance to other occupants.
- 5 Position noise generating activities and areas, for example building services, sports and outside play, and areas with a lot of vehicular activity away from sensitive properties or opening windows.
- 6 Position buildings or rooms which are less sensitive to noise to act as screens or baffles between noise sources and quiet areas.
- 7 Regular maintenance of plant and equipment will reduce vibration and noise, and optimise energy efficiency.
- 8 Use landscaping and planting to act as buffers between noise generating and noise sensitive land uses and properties within and adjacent to the development site.



> Examples, Solutions & Advice

Materials & Waste

Q1

What sustainable materials will be used?

◀ View your response to this question

Advice and Guidance

- 1 Design out waste at the initial design stage, by prioritising reuse and recovery of materials, exploring off-site construction methods, materials optimisation, waste efficient procurement and creating a structure which can easily be adapted.
- 2 Source local and traditional materials to reduce 'road miles' and the carbon footprint, and to reflect local character and heritage.
- 3 Use materials that are 'carbon neutral' (or low embodied carbon) e.g. wood, wool and straw/reed. Preferably water and vegetable oil based paints should be used due to their low VOC content.
- 4 Source timber that is Forest Stewardship Council (FSC) certified, or equivalent.
- 5 Consider whole life costing and performance when specifying materials, taking into account capital cost, longevity, operational and maintenance costs, and carbon, water and ecological footprints.

Q2

How will the waste hierarchy be embedded into the development's construction and operation?

◀ View your response to this question

Advice and Guidance

- 1 Establish targets for the reuse and recycling of construction waste, and ensure sorting and disposal of waste. Monitoring should be in place to ensure waste is being properly sorted and disposed and that targets are being achieved on site.
- 2 Reuse structures and buildings where possible, but if demolition is necessary then reuse demolition waste in the construction of the new building or for site levelling and landscaping.
- 3 Offsite manufactured components, such as Structurally Insulated Panels, or modular construction may be appropriate and can reduce construction time and waste. Their use should be considered alongside other environmental impacts, such as road miles if they are not manufactured locally.
- 4 Design the new building with flexible internal space to allow the building to be adaptable to changing needs without further demolition work.
- 5 Return packaging and unused materials to suppliers.



> Examples, Solutions & Advice

Design & Safety

Q1

How will the design of the development contribute to place making?

◀ View your response to this question

Advice and Guidance

- 1 Choose an appropriate architectural response that relates well to both the character of the surrounding area and the new building's operation and role within the urban context, for example as a landmark building.
- 2 Undertake a contextual analysis of the site to inform the building's design - its siting and orientation, aspect, form, scale, massing, and interaction with adjacent open space (both public and private) and buildings.
- 3 Enhance the public realm and sense of place, for example by creating multi-functional spaces, intuitive layouts and clear signage for principal entrances, and landscaping to create a welcoming, attractive site.
- 4 Use high quality durable materials, external finishes, and hard and soft landscaping to create a sense of place and worth.
- 5 Maintain and improve visual amenity of the surrounding area through appropriate siting and treatment of signage, materials choice, street furniture and soft landscaping.
- 6 Create active building frontages along the interface between the development site and surrounding area to facilitate a vibrant public realm and passive surveillance of public open space.

Q2

How could the site and building(s) be adapted to different uses during its lifetime?

◀ View your response to this question

Advice and Guidance

- 1 When building new education and health facilities, and extensions to them, a master plan and strategy should be drawn up to ensure that future use and sustainable expansion of the site and building(s) are not prejudiced.
- 2 Construction with integral wall lintels allows co-joining of units.
- 3 Education facilities can benefit from flexible floor plates or lightweight, demountable internal construction to allow teaching and play spaces to be changed with minimal disruption.
- 4 The new building should be robust and durable in its design, construction and use of materials. Attention needs to be given to the quality of detailing to extend the lifespan of the building and outside space, ensuring that future occupiers appreciate the worth of renovating the building for ongoing use or other uses.
- 5 By developing a design brief which includes the range of services to be provided and how they may grow or adapt over time, will ensure the building is fit for purpose now and in the future.



> Examples, Solutions & Advice

Design & Safety

Q3

How will the design promote inclusivity, security and safety?

◀ View your response to this question

Advice and Guidance

- 1 Create active frontages and principal entrances fronting onto the street that enable passive surveillance, provide a welcoming access point, and contribute positively to the streetscene.
- 2 A single point of access for users of the building will provide security advantages, but ensure any single entrance, and any boundary fencing or walls are not intimidating or unwelcoming. Suitably designed and located separate entrances should be created for service, delivery and emergency vehicles.
- 3 A clear and secure separation of public and private spaces should be created through the suitable design of boundary treatments and 'edges'.
- 4 Screening and privacy for private outdoor spaces and storage areas.
- 5 Provide lockable gates, physical boundary features and robust lockable doors and windows.
- 6 Provide adequate lighting for entrances and exits, driveways, footpaths and car parks.
- 7 Approaches, doorways, floor levels and circulation space should be designed for easy access by all abilities, and avoid creating trip hazards and obstacles.6 Provide adequate lighting for entrances and exits, driveways, footpaths and car parks.
- 8 Provide high quality internal and external communal space that feels safe and welcoming. Ensure all spaces can be passively or actively observed to ensure the safety and wellbeing of vulnerable users and to discourage certain behaviours, such as bullying.
- 9 Provide adequate, safe and high quality communal outdoor space that facilitates safe linkages to nearby open and green spaces in order to promote good mental and physical health, and enable informal social interaction between users in a safe environment.
- 10 Provide safe and secure cycle storage and changing facilities.