Climate Change section of the City of York Local Plan

Carbon Trust report

Final version: 19/06/2017

Prepared by:
The Carbon Trust
4th Floor, Dorset House
27-45 Stamford Street
London SE1 9NT
United Kingdom
Tel 020 7170 7000

Prepared for:
City of York Council
West Offices, Station Rise
York YO1 6GA
United Kingdom
Tel 019 0455 1550

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INTRODUCTION

This report has been developed by the Carbon Trust to assist City of York Council (CYC) in developing the Climate Change section of their new Local Plan.

The Carbon Trust has carried out a comprehensive review of the existing evidence-base for CYC, and suggested viable policy wording based on desk-based research, discussions with industry experts and previous experience.

We have made an evidence based judgement on the viability of the proposed policies, including an assessment of the qualitative and quantitative costs, drawing on our understanding of the local context and proactive engagement with the planning team at CYC and conversations with other Local Planning Authorities (LPAs), such as Bath, Guildford, and Hull.

The importance of Local Authorities in tackling climate change

Local authorities have a key role to play in ensuring that the UK mitigates and adapts to the impacts of climate change. As they provide a range of local services that will be affected by climate change, it is important that local councils consider the characteristics of their local areas to promote fit for purpose policies, in particular in buildings, surface transport, and waste which account for around 40 percent of UK GHG emissions.

A report by the Committee on Climate Change (CCC), an independent, statutory body and adviser to the UK Government established under the Climate Change Act 2008, sets out the crucial role councils have in helping the UK meet its carbon targets and preparing for the impacts of climate change. Local authorities are best placed to drive and influence emissions reductions in their wider areas "*through the services they deliver, their role as social landlords, trusted community leaders and major employers, and their regulatory and strategic functions"*- states the report. According to the CCC, emissions reductions without local action will be insufficient. In its recent strategy on the Future of Heating, the UK government too recognises that local government has a key role to play in decentralised energy, by setting local planning requirements to enable heat network developments.

Our experience shows us that the success of energy infrastructure projects depends upon understanding stakeholder views and securing commitment from a range of stakeholders to switch from the status quo to something considered as new. We recognise the role that local authorities such as CYC can play in harnessing their convening power to bring together groups such as local businesses, academia and citizen organisations, to create a wider community for action within their cities. In this regard it is very positive that CYC already recognises that a strong collaboration between the local community and developers is instrumental in ensuring that new housing is environmentally sustainable for instance.

1. REVIEW OF EVIDENCE BASE

Local and national context

The following section presents a short summary of the desk-based review undertaken by the Carbon Trust to collate evidence for the policies. The supporting information is divided into UK policies, CYC strategic documents, and information around the local area.

NATIONAL POLICIES

National Planning Policy Framework (2012)

The NPPF sets out the Government's planning policies for England, and how these are expected to be applied. The NPPF must be taken into account in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions.

NPPF states that at its heart is a presumption in favour of sustainable development, which should be seen as a golden thread running through plan-making and decision making (¶14). Planning should **always** seek to secure high quality design (¶17) and operate to encourage sustainable growth (¶19).

Although LPAs should consider using design codes where they could help deliver high quality outcomes, design policies should avoid *unnecessary* prescription or detail (¶59). LPAs should not refuse planning permission for buildings or infrastructure which promote high levels of sustainability because of concerns about incompatibility with an existing townscape (¶65).

Planning plays a key role in helping shape places to secure radical **reductions in greenhouse gas emissions**, **minimising vulnerability** and **providing resilience** to the impacts of climate change, and **supporting the delivery of renewable and low carbon energy and associated infrastructure** (¶93).

LPAs should adopt **proactive strategies** to **mitigate and adapt** to climate change in line with the objectives and provisions of the Climate Change Act 2008 (¶94) and design their policies to maximise renewable and low carbon energy development, and identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems (¶97).

The costs of any requirements likely to be applied to development, such as requirements for affordable housing, standards, infrastructure contributions or other requirements should, when taking account of the normal cost of development and mitigation, **provide competitive returns to a willing land owner and willing developer** to enable the development to be deliverable (¶173).

To support the move to a low carbon future, LPAs should:

- plan for new development in locations and ways which reduce greenhouse gas emissions;
- actively support energy efficiency improvements to existing buildings ; and
- when setting any local requirement for a building's sustainability, do so in a way consistent with the Government's zero carbon buildings policy and adopt nationally described standards (¶95).

Since the publication of the NPPF, the Government has removed the Zero Carbon Buildings policy.

National Planning Practice Guidance

The National Planning Practice Guidance (NPPG) is a web-based resource which brings together planning guidance on various topics into one place. The most relevant categories for this study are: Air quality, Climate change, Community Infrastructure Levy, Local Plans, Renewable and low carbon energy and Use of planning conditions.

Climate Change Act (2008)

The Climate Change Act commits the government to reducing greenhouse gas emissions by at least **80% of 1990 levels by 2050**. The Act also requires the government to set legally-binding 'carbon budgets' (below 1990 levels):

- 3rd (2018-2022) – 35% by 2020;
- 4th (2023-2027) – 50% by 2025; and
- 5th (2028-2032) – 57% by 2030.

Additionally, the UK Government is required under the 2008 Climate Change Act to publish a UK-wide climate change risk assessment every five years.

Paris Agreement, 21st Conference of the Parties (COP21)

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a **global temperature rise this century well below 2 degrees Celsius** above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. The Paris Agreement requires all Parties to put forward their best efforts through "**nationally determined contributions**" (NDCs) and to strengthen these efforts in the years ahead. This includes requirements that all Parties report regularly on their emissions and on their implementation efforts.

Planning and Energy Act (2008) and subsequent amendments by the Deregulation Act (2015)

The Planning and Energy Act was enacted to enable local planning authorities to set requirements for energy use and energy efficiency in local plans. It stated that LPA may in their local development plan, include policies imposing reasonable requirements for:

a. a proportion of energy used in development in their area to be energy from **renewable sources** in the locality of the development;
b. a proportion of energy used in development in their area to be **low carbon energy** from sources in the locality of the development;
c. development in their area to comply with energy efficiency standards that exceed the energy requirements of building regulations.

The Deregulation Act (2015) removed the powers granted in point "c", removing the ability of LPAs to set energy efficiency standards for dwellings that exceed building regulations. However, the amendment hasn't come into force yet. The removal of section 1c is noted as a 'prospective' provision on the government website. Sustainable design and construction policies for non-domestic building developments are not affected by the amendments made in the Deregulation Act.

Planning and Compulsory Purchase Act 2004

This Act was enacted to make provision relating to spatial development and town and country planning; and the compulsory acquisition of land. Local authorities were given the power to acquire land by compulsory purchase if they think that it will facilitate the carrying out of development, re-development or improvement on or in relation to the land, on condition that such acquisition will be of economic, social or environmental benefit to their area.

Local Planning Authorities have a **statutory obligation**, under Section 19(1A) of the Planning and Compulsory Purchase Act 2004 to include "policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change".

Planning Update: Ministerial Statement, DCLG (March 2015)

The ministerial statement confirmed that until the amendment to the Planning and Energy Act is commenced under the Deregulation Act, LPAs would be expected to not set conditions with requirements above a Code level 4 equivalent for energy performance. This is equivalent to a 19% reduction in Dwelling Emission Rate compared to the Target Emission Rate (Part L1A of the Building Regulations 2013). A number of local

authorities have included this Code level 4 equivalent for energy performance in homes within their local plans.
The statement also described the new optional technical standards for housing, in addition to minimum Building Regulations, which include standards for water and access, and a new national space standard. These optional standards may only be included into local plans where there is evidenced local need and where the viability of development is not compromised.

DECC Heat Strategy: 'The future of heating: meeting the challenge' (2012)

Over three quarters (79%) of the energy we use in our homes is for space and hot water heating. Generating heat causes around a third of UK greenhouse gas emissions.

The document describes the Government's strategy for decarbonising heat to contribute to meeting carbon budgets and the 2050 target (see Climate Change Act 2008). It sets out the intention to remove all direct greenhouse gas emissions from heating our buildings by 2050. The government estimates that up to 20% of UK domestic heat demand might be served by heat networks by 2030

The strategy highlights that one of the three ways to supply low carbon heat is by constructing **heat networks** connected to low carbon sources. This is typically the most cost-effective solution in urban areas.

The types of heat sources compatible with heat networks presented are:

- Gas CHP
- Biomass boiler
- Heat pumps, Waste, geothermal, bio-CHP, heat from industrial processes, etc.

Based on construction and demolition rates at the time of drafting the Strategy, around two thirds of the buildings that will be in the UK in 2050 have already been built. This makes **retrofit** technologies that can reduce an existing building's energy demand particularly important.

Next steps for UK Heat Policy, CCC (2016)

This report by the Committee on Climate Change states that heating and hot water for UK buildings make up 40% of our energy consumption and 20% of our greenhouse gas emissions.

For new build, their estimates show that the average annual rate of new build is expected to be in the range of 150,000 to 350,000 homes a year between now and 2035 (and 150,000-200,000 from 2035-2050). This equates to more than 50 $MtCO_2e$ of direct emissions from heating between 2016 and 2030 under current standards.

With regards to the heat network potential, they expect 3 million on-gas homes, generally in areas of high heat demand density, to be technically suitable for heat networks. Their central trajectory for meeting the 5th carbon budget included around 0.1 million homes on low-carbon heat networks by 2030 (1.3 million additional on-gas homes could be connected to low-carbon heat networks by 2030).

Renewable Heat Incentive (RHI)

The UK Government expects the RHI to contribute towards the 2020 ambition of 12% of heating coming from renewables. The RHI is a UK Government scheme set up to encourage uptake of renewable heat technologies amongst householders, communities and businesses through financial incentives. It is the first of its kind in the world and contributes to the UK renewable targets by helping meet the cost of installing renewable heat technologies. The technologies for which you can claim RHI support for are:
Domestic RHI:

- Biomass (wood fuelled) boilers
- Biomass pellet stoves with integrated boilers providing space heating
- Ground to water heat pumps

- Air to water heat pumps
- Solar thermal panels (flat plate or evacuated tube only) providing hot water for your home

Non-domestic RHI:

- Biomass
- Heat pumps (ground source, water source and air source)
- Deep geothermal
- Solar thermal collectors
- Bio methane and biogas
- Combined heat and power (CHP) systems.

Feed-in Tariffs scheme

The FIT scheme is a government programme designed to promote the uptake of renewable and low carbon electricity generation scheme. FIT payments are made quarterly (at least) for the electricity the installation has generated and exported. It is available for anyone who has installed, or is looking to install, one of the following technology types up to a capacity of 5MW, or 2kW for CHP:

- Solar photovoltaic
- Wind
- Micro CHP
- Hydro
- Anaerobic digestion

Climate Change Levy (CCL)

The CCL is a tax on UK business energy use, charged at the time of supply. CCL is a tax on energy delivered to non-domestic users in the UK. Its aim is to provide an incentive to increase energy efficiency and to reduce carbon emissions.

Energy Company Obligation (ECO)

This is an energy efficiency scheme in Great Britain to help reduce carbon emissions and tackle fuel poverty in the housing sector. Energy suppliers have legal obligations to deliver under ECO provided they are of sufficient scale. Under one of the obligations within ECO, the Carbon Emissions Reduction Obligations requires suppliers to promote connections to DH systems as part of 'primary measures'.

The mains changes that occurred in 2017 were:

- The Affordable Warmth Group will be increased to around 4.7m rather than 4m (in consultation) households;
- **Local authorities will have a role in determining eligible homes**;
- Eligibility for certain measures under Affordable Warmth will be extended to social housing in EPC bands E, F or G; and
- The requirement to deliver a minimum level of solid wall insulation will be increased from the proposed equivalent (in consultation) of 17,000 measures per year to 21,000 per year.

UK Climate Change Risk Assessment: Evidence Report: Summary for England, CCC (2017)

This report summarises the climate related risks for England which are set out within the UK Climate Change Risk Assessment (CCRA), including risks to people, the built environment and energy infrastructure. The report calls for 'additional action in the next five years to address the risks to health and wellbeing from heat, cold and flooding'. It warns that lack of alignment between related policy goals (i.e. flood risk management with housing and planning policies) could present an obstacle for delivering effective climate adaptation.

National Adaptation Programme, DEFRA (2013)

The NAP addresses adaptation actions to address sectorial risks identified in the CCRA. For the built environment, the risks are summarised as:

- Properties at significant risk of flooding and associated damage;
- Ability to obtain flood insurance for residential properties;
- Urban Heat Island;
- Overheating of buildings;
- Energy demand for cooling;
- Reduction in water available for public supply; and
- Vulnerable people at risk.

For homes and communities, the NAP focusses on three key adaptation areas: water efficiency, flood protection and sustainable drainage and managing risks from overheating. The objective for infrastructure is to ensure it is located, planned, designed and maintained to be resilient to climate change, including increasingly extreme events.

LOCAL STRATEGIES AND FRAMEWORKS

Council Plan 2015-2019

This strategic document highlights CYC's key priorities for the 2015-19 period: a prosperous city for all, a focus on frontline services, and a council that listens to residents. The aim is for York to become a leading low emission city, and one in which **sustainability underpins everything they do**. This is aligned to the NPPF which sees sustainability as the heart of planning policies and decision making.

CYC aims to take steps to improve air quality, and to deliver housing and development while protecting the Green belt. In the period covered by the Council Plan, CYC will work towards plans for '**One Planet Living'**.

One Planet Council Framework

One Planet Council forms part of the city's wider One Planet York initiative, and is the internal program of change in relation to sustainability and resilience. The aspirations set out in the Framework are:

- Significantly reduce environmental footprint, while saving money;
- Protect and enhance natural and built environment so that residents are able to enjoy the city;
- For York to be the 'Greenest City in the North';
- For sustainable transport and development to be prioritized; and
- To make a real difference, as a city, to combating climate change.

The Framework sets out a list of principles, of which the most relevant for this study are:

- Zero carbon, i.e. **encourage sustainable development that has a low carbon footprint through the Local Plan**;
- Use of sustainable materials; and
- Strategic land use, i.e. improve the quality of the built environment, while being careful to protect the unique heritage and character of the city.

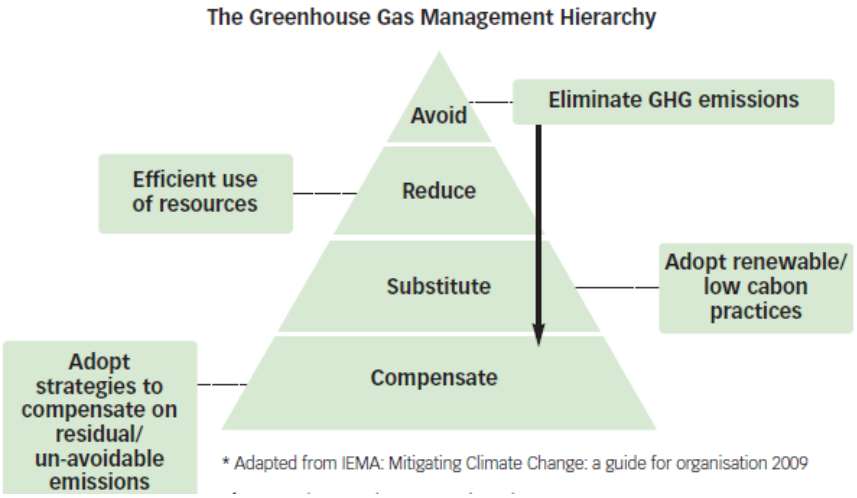
Additionally, the Council aims to generate more energy from renewable sources, create energy efficient buildings, and ensure York is climate ready.
The purpose is for the principles to be integrated into policies, strategies and service planning; including ensuring that sustainable development is supported in the Local Plan.

A Climate Change Framework for York, 2010-2015

The overall vision of the framework is to reduce greenhouse gas emissions across York and better prepare and adapt York's communities and businesses for the likely impacts associated with climate change. The framework recognises that the planning system in York can have a great impact on reducing present and future greenhouse gas emissions. It also can play a vital role in creating sustainable communities whereby buildings

are built to the highest sustainability standards and energy demand is low and met from localised, renewable or low carbon sources.
Headline targets:

- An ambitious framework that commits the city to **40 per cent reduction in carbon emissions by 2020**;
- Reduce the average residents' carbon footprint from 12.61 tonnes in 2006 by 80 per cent by 2050;
- Exceed the following renewable energy targets of 39MW/40 MW of installed renewable electricity capacity and 15MW/ 18MW of installed renewable heat capacity by 2020/ 2031.



Climate Change Action Plan for York, 2010-2013

This Action Plan is the delivery mechanism to achieving the Climate Change Framework's long term targets.
Action/ targets for:

- Creating **sustainable homes**: maintain and *where possible* improve the energy efficiency of York's private housing stock;
- **Sustainable buildings**: all new non-domestic buildings to be built to high environmental standards *including* energy efficiency measures;
- **Sustainable energy**: through CYC's planning process continue to work with future major developers on large scale sites to implement appropriate renewable/low carbon energy generation technologies;
- **Sustainable planning**: supplementary planning documents to ensure higher standards for sustainable design and construction and renewable energy in all new future developments in York. Through the emerging Local Development Framework look to create sustainable developments in all major new development sites including York Central/former British Sugar site/former North Selby Mine; and
- **Adaptation**: utilising risk assessments identify the most effective adaptive responses and begin incorporating these into council strategies, plans, partnerships and operations.

To achieve the ambitious 2020 city-level target set in the Climate Change Framework, and the 2050 target of the Climate Change Act 2008, CYC will need to maximise amongst others:

- Additional Combined Heat and Power schemes;
- Low carbon domestic and non-domestic heating improvements (retrofit); and
- Other low carbon/renewable schemes such as large-scale and medium-scale wind generation.

(despite these measures being subject to changes in national policy, detailed feasibility and available funding).

City Vision – York 2030, still making history

This document describes the vision for 2030, where York will be acknowledged as an environmental hub. In the vision:

- Sustainability is at the heart of the city;
- Local businesses and organisations have joined the council in signing up to the 'One Planet York' framework, promoting zero waste and zero carbon outcomes;

- York is rightly recognised as the Greenest City in the North; and
- **New housing is environmentally sustainable** and blends successfully with existing settlements.

LOCAL TECHNICAL STUDIES

City of York Council Renewable Energy Study, AMEC Environment & Infrastructure (2014)

This report is intended as evidence base for renewable energy generation in York, and builds on a previous study by AEA completed in 2010. The report is intended to be used to:

- Set renewable energy policies;
- Establish York's baseline energy performance;
- Identify renewable energy sites (solar, wind, district heating); and
- Support site allocations.

The report gives support for a policy which actively encourages renewable energy projects, and one which makes clear that developers would be supported when considering planning applications. It also gives support for a policy which encourages/requires developers of strategic sites (residential, commercial and employment) to reduce energy demand, CO_2 emissions and use renewable and low carbon energy technologies. According to the study by AMEC, Solar PV is by far the biggest opportunity for renewable energy in York, followed by DH and wind turbines.

The report provides a few key recommendations for the consideration of renewable and low carbon energy technologies:

- Wind: avoid green belt, environment sites/natural heritage sites, avoid infrastructure such as roads, railways etc., need to be sited sufficient distance from existing buildings to avoid noise pollution etc.;
- Solar PV: need to be south facing and clear from obstruction/shading, need to consider watercourses, pathways etc. and the land use, topography, sensitivity of site, flood risk, glare, and visual impacts;
- Biomass: need to consider Air Quality Management Zones; and
- Hydropower: need to consider flood risks, proximity to conservation areas, proximity to habitat or species areas, and availability of grid connection amongst others.

City of York Local Plan Viability Study, Peter Brett Associates (2014)

This is a strategic viability assessment of the emerging Local Plan from 2014 to:

- Understand the deliverability of the plan's allocations;
- Test implications of policies on financial viability of allocations; and
- Understand levels of CIL overage that may be realisable.

The policy costings in this study have been considered, and updated where appropriate within the Costings for Proposed Policies section of this report.

Managing Landscape Change: Renewable & Low Carbon Energy Developments – a Landscape Sensitivity Framework for North Yorkshire and York, AECOM (2012)

This framework is specifically designed to inform LPAs and those that make development management decisions for renewable and low carbon energy developments in York. It gives information on typical landscape effects of renewable and low carbon energy development, and advises on how to apply landscape sensitivity in policy development.

For example:

- Small scale hydro: it is advised to design built elements to be as small as possible, and ensure that colours and materials are in keeping with local landscape features.
- Biomass: one should ensure careful site layout design and siting of plant, as well as good practice during construction (i.e. tidy site etc.) and undertake landscape restoration works at the end of the construction period.

- Energy from Waste thermal processes: one should undertake landscape restoration works at the end of the construction period, and ensure that the direct impacts on views and on the site (e.g. loss of landscape features) are minimised.
- Micro solar PV: it is advised to follow best practice in design (including colour and appearance) and siting of panels to minimise visual impacts on character and appearance of heritage features.
- District heating: risks are temporary impacts during construction of underground pipe network, and a direct loss of existing landscape features (i.e. hedgerows) to make way for pipe.

The framework divides the potential effects by scale:

- large: effects over an expansive area due to the scale and potential prominence of the development;
- medium: over a wide area, potential to affect the character of the landscape at district level within a 5km radius;
- small: at a localised level, not beyond 2km radius; or
- site: in the immediate environs only.

As York is mainly urban, it has a moderate/ low landscape sensitivity.

Low Carbon and Renewable Energy Capacity in Yorkshire and Humber, AECOM, (2011)

The study provides a strategic, high level guide to the potential capacity of renewable and low carbon energy potential within North Yorkshire and York, as part of a regional level study based primarily on technical, physical and economic constraints and opportunities. It covers the 2010-2025 timeframe, however some of the data used is likely to be outdated.

According to the results of the study, York has a high potential for biomass energy resource, although this should be considered in the context of AQMAs. The study also found that district heating with CHP could be viable in the majority of the region's urban settlements, including York. Additionally, the urban nature of the city centre presents opportunities for microgeneration deployment, although this must be balanced with the need to protect the city's heritage environment.

The health impacts and costs of poor housing in York: a quantitative Health Impact Assessment, BRE (2015)

The Health Impact Assessment for private sector housing in York estimates the annual cost to society due to excess cold in homes is £1.3m. The main health conditions associated with excess cold are respiratory diseases, cardiovascular conditions, worsening of symptoms of rheumatoid arthritis and leg ulcers, increased risk of falls and excess winter deaths. Additionally, loss of work and school days may result in a reduction in educational attainment. Damp and mould growth in homes can be associated with exacerbation of asthma and respiratory conditions and social exclusion; the HIA for York estimates this contributes an annual cost to society of £81k per year.

Yorkshire and Humber Regional Adaptation Study, Yorkshire Futures (2009)

This report identifies current and future climate related threats and impacts for the region, and proposes adaptation options for managing risks to local services, infrastructure, assets, businesses and communities. The projections identify a broad range of climatic changes for the 2050s which include:

- Average daily temperatures in all seasons to increase by almost 2 °C;
- Annual rainfall to reduce by 6%;
- Annual rainfall to show increased seasonality with increases of up to 17% in winter and reductions of around 25% in summer;
- Major reduction in winter snowfall of up to 68%; and
- Sea level rise of around 0.35m.

The report calls for alignment of cross-sectoral adaptation actions, including improvements to drainage, water storage and flood management and retrofitting existing building stock for climate adaptation.

Joint Strategic Needs Assessment: Environment – Climate Change & Sustainability, York Health & Wellbeing (2015)

This website, hosted by CYC in partnership with the NHS Vale of York Clinical Commissioning Group, provides information on the public health impacts of climate change for York. It cites research which estimates that by 2050, York will be affected by climate change as follows (Arup, 2010):

- A significant increased risk of social, economic and environmental damage and disruption caused by increased flooding, heatwaves, and seasonal changes in rainfall and temperature;
- Estimated annual cost of climate related damage from £95m to £158m;
- Increased risks to public health and well-being from flooding and heatwaves, including increased risk of mortality and morbidity;
- Changes to local biodiversity;
- Increased demands on the public sector to respond to more frequent and severe weather events;
- Increased disruption to service delivery, transport and logistics and business continuity;
- Potential decline in quality of key assets and York's quality of life, wellbeing and sense of place;
- Increased risk of bad publicity and negative public perception occurring from repeated flooding events; and
- Potentially increased demands on public open space, recreation and tourism facilities.

2. CLIMATE CHANGE SECTION

The following section presents policy wording, definitions, reasoned justification and recommendations for further investigation to inform the development of the Climate Change Section of the CYC Local Plan.

In developing the policy wording we have considered the success factors and challenges in developing policies within Local Plans.

Success factors in developing polices within Local Plans:

- Prepare a robust evidence base;
- Include a hierarchy of energy policy – 'Lean, Mean, Green';
- Avoid misinterpreting information;
- Be specific yet flexible; and
- Require an energy statement.

Challenges when promoting Local Plan policies:

- Deliverability of schemes – balancing energy and other requirements;
- Monitoring implementation - how do you know contributions from renewables are being realised?;
- Political buy-in of councillors and chief executives on proposals.

Policy CC1: Renewable and Low Carbon Energy Generation

Policy CC1: Renewable and Low Carbon Energy Generation and Storage

(1) New buildings must achieve a reasonable reduction in carbon emissions of at least **28 per cent**. This should be achieved through the provision of renewable and low carbon technologies in the locality of the development. Proposals should set out how this will be achieved in an energy statement.

(2) Renewable and low carbon energy generation developments will be encouraged and supported in York. We will work with developers to ensure that suitable sites are identified and projects developed, working with local communities to ensure developments have their support. Developments on brownfield land are encouraged.

(3) Significant weight will be given to the way in which renewable and low carbon generation schemes contribute to the York Climate Change Framework and Action Plan targets to reduce carbon dioxide emissions in York by 40% by 2020 and 80% by 2050, in line with the 2008 Climate Change Act.

(4) Any application will also need to address the following :

i. the visual impact on York's historic character and setting, the sensitivity of the surrounding landscape and proximity to air fields and other sensitive landuse, including Conservation Areas;

ii. local communities and residential amenity resulting from development, construction and operation such as air quality, atmospheric emissions, noise, odour, water pollution and the disposal of waste;

iii. the location in terms of the scale of the proposal and new grid connection lines;

iv. national and internationally designated heritage sites or landscape areas, including the impact of proposals close to their boundaries;

v. nature conservation sites and features, biodiversity and geodiversity, including protected local sites and other sites of nature conservation importance, and potential effects on setting, habitats, species and the water supply and hydrology of such sites;

vi. the road network, taking account of the accessibility of the site by road and public transport and also the proximity to the renewable fuel source; and

vii. agriculture and other land based industries.

(5) Proposals for renewable and low carbon energy storage developments will also be supported and encouraged. Developments should be sited a suitable distance from major residential areas and have suitable fire suppression procedures. The majority of industrial or semi-industrial and low-grade farmland sites would be considered suitable.

(6) Any application for renewable energy would need to meet the criteria above and consider the areas of potential and other technical requirements identified in the Council's most up to date Renewable Energy Study.

(7) Strategic sites are required to produce Energy Masterplans to ensure that the most appropriate low carbon, renewable and energy efficient technologies are deployed at each site, taking account of local factors and the specifics of the site plan.

DEFINITIONS

1. Renewable energy is: "energy that is derived from natural processes (e.g. sunlight and wind) that are replenished at a higher rate than they are consumed. Solar, wind, geothermal, hydropower, bioenergy and ocean power are sources of renewable energy" (International Energy Agency).

2. Renewable and low carbon energy generation is: "the generation of energy from low carbon sources". This could include absorption cooling, biomass, CHP, ground cooling, GSHP, PV, solar hot water and wind energy.

3. Energy storage is: "technologies absorb energy and store it for a period of time before releasing it to supply energy or power services. Through this process, storage technologies can bridge temporal and (when coupled with other energy infrastructure components) geographical gaps between energy supply and demand. Energy storage technologies can be implemented on large and small scales in distributed and centralised manners throughout the energy system" (International Energy Agency).

REASONED JUSTIFICATION

A. Local Planning Authorities have a statutory obligation, under Section 19(1A) of the Planning and Compulsory Purchase Act 2004 to include "policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change". The National Planning Policy Framework (2012) (NPPF) recognises the key role of planning in securing "radical reductions in greenhouse gas emissions" (¶93) and states that Local Planning Authorities should "have a positive strategy to promote energy from renewable and low carbon sources" and "consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources" (¶97).

B. Policy CC1 encourages the development of renewable and low carbon energy generation. The York Renewable Energy Study (2014) assessed the city's potential for generating renewable energy and concluded that there is potential to generate renewable energy from a variety of available sources including wind, solar and hydro. The study also assessed the impacts of such potential on the city and recommends potential areas where renewable energy could be considered in the future (and subject to further feasibility studies and full planning processes.)

C. This study also builds on the Renewable Energy Strategic Viability Assessment (2010), and reviewed the findings, expanded the range of technologies considered and applied further constraints to those areas previously identified as potential areas of search for renewable energy.

D. As part of the Renewable Energy Study (2014) there are a series of maps which highlight potential areas across the city that could be considered for renewable energy generation in the future. These maps are to encourage consideration of renewable energy generation only. It also does not preclude future projects that come forward that are not highlighted in this study. However all applications will need to meet Policy CC1.

E. To assist in the assessment of proposals coming forward the Council will encourage applicants to use Managing Landscape Change: Renewable and Low Carbon Energy Developments – A Sensitivity Framework of North Yorkshire and York (2012) in preparing their planning applications for renewable electricity and heat production installations. Commercial scale proposals for low carbon and renewable energy schemes that respond favourably to the opportunities and sensitivities identified in these documents and which meet the Spatial Principles, will be encouraged and supported.

F. The policy also allocates potential renewable energy sites. These were deemed initially technically viable in the Renewable Energy Study (2014) and have willing landowners who wish to explore further the potential for generating renewable energy on these site (Subject to detailed feasibility and planning processes).

G. Energy storage is crucial to increasing the proportion of renewable and low carbon energy in the system. This is an emerging area and the Council will continue to work with relevant experts to ensure that suitable energy storage opportunities are identified and brought forward. Supplementary Planning Guidance may be produced in due course, including on safety requirements for storage sites.

Carbon reduction

H. Alongside the planning obligation outlined in the Planning and Compulsory Purchase Act (2004) and NPPF as outlined in point A, the UK government is committed to achieving carbon reduction targets outlined in the UK Climate Change Act (2008) and the ratified Paris Agreement.

I. At a local level, CYC have outlined their commitment to achieving carbon reduction targets of 40% by 2020 and 80% by 2050, within the Climate Change Framework for York. This is in line with the binding national targets set in the Climate Change Act. CYC outline in their City Vision 2030, that York aspires to be the 'greenest city in the north', where 'sustainability underpins everything that we do'. Setting a target for carbon reduction that goes beyond the Target Emission Rate of Part L of the Building Regulations will enable York to deliver on this ambition.

J. Part 1 of the Planning and Energy Act (2008) gives powers to LPAs to set policy to reduce carbon emissions in new developments. Point "a" gives powers to require that a proportion of energy used in a development is from renewable or low carbon sources. This was not amended in the Deregulation Act and therefore these powers remain.

K. Whilst the Deregulation Act removed point "c" which relates to powers to set targets to exceed the energy efficiency requirements of Building Regulations, it is possible that compliance with a carbon reduction target will be more cost effective with the deployment of enhanced energy efficiency measures rather than renewable and low carbon sources. It is therefore recommended that the council allow developments to comply with this policy with enhanced energy efficiency measures or a mix of enhance energy efficiency and renewable and low carbon sources where appropriate.

L. The target of 28% is aligned to the Committee on Climate Change's analysis of the Fourth Carbon Budget of the Climate Change Act, which determines the most cost-effective path for reducing emissions from buildings.

M. We are not recommending the inclusion of a threshold linked to the carbon target, as there isn't evidence to support that the costs to achieve this reduction are substantially different at a small scale compared with larger scale developments. Several LPAs have successfully implemented a similar target with no threshold in recent years. We do, however, recognise that the administrative burden of checking compliance with this requirement would sit with major and minor DM teams under this policy scenario. We therefore recommend that training is provided to the relevant staff in order to provide guidance on how compliance can be efficiently and cost-effectively determined during the application process.

RECOMMENDATIONS FOR FURTHER INVESTIGATION

1. Planning policy for energy storage is a new area but is likely to rise significantly in importance over the next few years. There is no existing policy that we or the Renewable Energy Association (REA) is aware of, so it is an untested area. We would recommend further conversations with organisations such as REA and the local DNO to determine the detail of such a policy, which could be picked up in Supplementary Planning Guidance. Storage sites should also be considered in any future studies relating to site allocations.

2. We understand that the existing site allocations were based on landowner/developer plans to bring forward solar projects. We would recommend re-engaging with those sites but also with the local renewables industry and potential developers to explore other possible site allocations.

3. Previous studies have shown wind energy potential. Whilst onshore wind projects are challenging in the current social and political climate, they are not impossible. The first hurdle for potential projects is to demonstrate significant support from local communities. We would recommend that York engage with communities at potential sites to gauge the potential level of support or objection. Efforts could then be focused on stakeholder engagement at the sites that have the most potential in terms of technical considerations and likely local support.

4. We understand that there are a number of brownfield sites being considered for redevelopment. Whilst some of these will be required / more suitable for housing, we would encourage York to investigate the potential for some of those sites to be used for renewable generation or energy storage projects.

5. The most recent renewable energy study for York was completed in 2014. Whilst it provides strong evidence for the viability and potential for a range of renewable energy sources, some of the data used will be outdated as costs for renewable energy decrease and the opportunities for renewable energy sites change as a result of changing public opinion and ownership etc. It is also likely that emerging technology areas such as energy storage and CCS will play a more prominent role in the transition to a low carbon economy and consequently warrant further investigation on their potential in York. It is recommended that CYC seek to update the previous renewable energy as soon as possible to ensure that the evidence base remains robust and updated throughout the lifetime of the plan. We also recommend that the updated study broadens the scope of renewable energy considered to align itself with the new emerging technologies and markets.

6. In reviewing the evidence base, it appeared that there is a lack of site-specific Energy Masterplans for the strategic sites allocated in the plan. It is recommended that these studies are developed in collaboration with developers and landowners to ensure that the most appropriate low carbon, renewable and energy efficient technologies are deployed at each site, taking account of local factors

and the specifics of the site plan. This will help maximise the value and impact of the policies and decisions taken. Exeter Council has successfully adopted this strategy.

Carbon reduction

7. We recommend that CYC seek to undertake a study to determine the most appropriate target for carbon reduction in York, which assesses the emissions sources in York and determines the most cost-effective pathway to decarbonisation across buildings, water, waste and transport in York. If taking a more ambitious standpoint, as is outlined in the City Vision 2030, one could argue that the Planning and Compulsory Purchase Act (2004) legally obligates LPAs to design policies which contribute to climate change mitigation, and a target is therefore necessary to meet this obligation. In this instance, it would be recommended that CYC undertake a study which sets a science based carbon reduction target for new development in York, which is in line with climate science and binding targets outlined in the Climate Change Act. Conversely, if CYC seek to test the viability of a carbon reduction target, it is recommended that a study is undertaken to investigate the impact of the target on the viability of different development types in order to identify the most appropriate target for York. LPAs that have adopted a policy of this nature in recent years have typically set a target of between 10-40%. The target would be measured against a baseline of meeting the Target Emission Rate outlined in Part L of Building Regulations.

Policy CC2: Sustainable Design and Construction

Policy CC2: Sustainable Design and Construction

(1) Developments which demonstrate high standards of sustainable design and construction will be encouraged. Proposals for developments will be required to demonstrate energy and carbon dioxide savings in accordance with the energy hierarchy: reducing energy demand, using energy and other resources efficiently and generating low carbon or renewable energy. Development proposals will be expected to consider good practice adaptation principles for climate resilience in their design, construction and operation.

Sustainable Design and Construction of New Development

Proposals will be supported where they meet the following:

i. All new residential buildings should:
- achieve at least a 19% reduction in Dwelling Emission Rate compared to the Target Emission Rate (calculated using Standard Assessment Procedure (SAP) methodology as per Part L1A of the Building Regulations 2013); and
- achieve a water consumption rate of 110 litres per person per day (calculated as per Part G of the Building Regulations).

ii. All new non-residential buildings with a total internal floor area of 100m^2 or greater should achieve BREEAM 'Excellent' (or equivalent);

iii. Strategic Site developments should undertake a BREEAM Communities assessment (or equivalent);

iv. All new residential and non-residential developments will be required to submit an Energy Statement which demonstrates how these requirements will be met. This should include a sustainability checklist, which shows how principles for sustainable design, construction and operation will be achieved.

Conversion of Existing Buildings and Change of Use

(2) Applications for conversion of existing residential buildings or change of use to residential should achieve BREEAM Domestic Refurbishment 'Very Good' and non-residential conversions or change of use will need to achieve BREEAM 'Excellent'.

Consequential Improvement to Existing Dwellings

(3) When applications are made to extend dwellings, proposals will be expected to demonstrate reasonable and proportionate improvements to the overall energy performance of the dwelling. This will be in addition to the requirements of Part L of the Building Regulations.

DEFINITIONS

1. Climate change mitigation refers to action taken to reduce the sources or enhance the sinks of greenhouse gases.
2. Climate change adaptation refers to action taken to reduce the vulnerability of people and the built and natural environment to current and expected climate change effects, such as flooding, drought, high temperatures and extreme weather events.
3. BREEAM is the Building Research Establishment's Environmental Assessment Method for the independent certification of sustainability performance for new non-domestic buildings and refurbished domestic buildings.
4. BREEAM Communities is a methodology for assessing the sustainability performance of large-scale developments, rather than individual buildings, and therefore would apply to the Strategic Sites identified in the Local Plan. The standard is designed to help create healthy and vibrant communities which have a low impact on the environment and are economically successful.

REASONED JUSTIFICATION

N. Policy CC2 aims to ensure that all new development in the City of York achieves high standards of sustainable design and construction, by minimising greenhouse gas emissions, using resources efficiently, enhancing climate resilience and promoting health and wellbeing. A Sustainability Statement (including a Low Carbon Energy Strategy and a Sustainability Checklist) will be required for all new residential and non-residential applications.

Energy efficiency

O. Research carried out by Carbon Descent on behalf of the Council indicated that, without positive intervention to reduce CO_2 emissions, emissions in York will rise by around 31% by 2050.[1] The report highlights the substantial role that energy efficiency measures, and renewable energy or low carbon energy generation will need to play in both residential and non-residential development if the city is to meet its own greenhouse gas emissions targets for 2020 and 2050, and the Climate Change Act's 2050 target.

P. The Deregulation Act 2015, the ministerial statement following the Housing Standards Review and the HM Treasury report ('Fixing the foundations: creating a more prosperous nation') all directly affect Policy CC2: Sustainable Design and Construction for housing. Currently, councils in England can no longer demand energy efficiency improvements beyond the requirements of Building Regulations, require new homes to achieve zero carbon standards, implement 'allowable solutions', or ask for new housing to meet any level of the Code for Sustainable Homes (CfSH). However, a 19% reduction in Building Emission Rate versus Target Emission Rate is allowable until the commencement of the

[1] Carbon Descent 2010: Carbon modeling study for York.

amendment to the Energy and Planning Act 2008; this is equivalent to energy performance required for CfSH level 4.

Future changes to energy efficiency legislation

Q. DCLG have confirmed that the decision on when (and if) the amendment of the Planning and Energy Act 2008 (as outlined in the Deregulation Act 2015) will come into force will depend on the recently elected government. The previous Conservative/Liberal Democrat coalition government did have a timeline for introducing the amendment, but the former Conservative government had not made a decision on it, apart from the scrapping of the zero carbon homes target. In the absence of a position in government, we have been informed by DCLG that the majority of planning authorities are requiring a 19% reduction in the Dwelling Emission Rate and the higher water standard for the time being, which is in line with the policy that we have proposed. Should the amendment come into force during the consultation stage or lifetime of the plan, CYC could revert to social and economic justification for the inclusion of this policy.

R. It is not yet known how the implementation of the EU Energy Performance of Buildings Directive will be affected by the UK leaving the European Union. The Directive introduced the requirement for Energy Performance Certificates. It also set a 'nearly zero energy' target for buildings occupied and owned by public authorities by 2018, and for all new buildings by 2020. The departure from the EU may affect other policies and programmes related to climate change mitigation and adaptation in the UK.

S. From April 2018, private landlords must ensure their properties in England and Wales reach at least an Energy Performance Certificate (EPC) rating of E, under the Energy Efficiency (Private Rented Property)(England and Wales) Regulations 2015. This legislation will require improvements to all F and G rated properties, subject to exemptions.

Water efficiency

T. The new optional technical standard for water consumption in the home states that councils may request new housing developments to achieve 110 litres/person/day (compared to the 125 litres/person/day required in current Building Regulations Part G), where they can justify the need. Councils will be required to establish a clear need for demanding the more stringent water efficiency standard by demonstrating:

- existing sources of evidence;
- consultations with the local water and sewerage company, the Environment Agency and catchment partnerships; and
- consideration of the impact on viability and housing supply of such a requirement.

U. Yorkshire Water is classified as being under 'moderate stress' by the Environment Agency (2013), for current and future scenarios. The Humber river basin district river basin management plan states that 'implementing water efficiency measures is essential to prepare and be able to adapt to climate change and increased water demand in future'. It also cites local plan policies requiring 110 litres/person/day in new homes as an effective measure for water demand management in the area.

BREEAM

V. BREEAM is used widely in local planning policy in the UK to demonstrate high standards of sustainable design and construction. It is a well-established methodology for ensuring that the following measures have been considered in the design and construction of a new development:

- Management;
- Health and wellbeing;
- Energy;

- Transport;
- Water;
- Materials;
- Waste;
- Land use and ecology;
- Pollution; and
- Innovation.

W. Bespoke BREEAM strategies can be developed for individual buildings and sites. Achieving the BREEAM 'Excellent' standard requires mandatory minimum standards, which go beyond the minimum requirements of building regulations; these are related to:

- Responsible construction practices;
- Commissioning and handover;
- Seasonal commissioning;
- Visual comfort;
- Indoor air quality;
- Water quality;
- Energy and carbon reduction;
- Energy monitoring;
- Water consumption;
- Water monitoring;
- Responsible sourcing of materials; and
- Operational waste.

X. Some councils have noted that using BREEAM can help to reduce process costs for compliance with planning policy, as it fits the NPPF requirements for sustainable development and reduces the need for councils to develop and check their own sustainability requirements.

Consequential Improvements

Y. It is estimated that 80% of buildings in the UK will still be in use by 2050. As such, it is important that these buildings use energy in the most efficient way. Of the total number of planning applications received in York, almost 50% of them are for householder development.

Z. 'The Condition of Private Housing in York' (BRE, 2015) report indicates the potential for improving the energy performance of existing homes. The report estimates that within the private sector in York there are 10,037 dwellings (13%) with less than 100mm of loft insulation, and only 22% of dwellings with lofts have 250mm+ of loft insulation. There are an estimated 22,608 dwellings (˜30%) with un-insulated cavity walls and 13,839 with solid walls (˜19%). As such, the Council as Planning Authority will support and encourage consequential improvements when applications for extensions to dwellings are made to help improve energy efficiency. Since consequential improvements for non-residential buildings are required for the Building Regulations this policy focuses solely on housing. The Council will support homeowners in delivering efficiency improvements by identifying financial support initiatives that are applicable to the proposed energy efficiency measures.

AA. A flexible approach will be applied when dealing with listed buildings or buildings in conservation areas where it may measures that would help safeguard the asset from harm arising as a result of climate change will also be considered. Ensuring the safeguarding of older dwellings can often be a more sustainable option than allowing their demolition and rebuilding of new dwellings to modern standards due to the CO_2 emissions that would result from the demolition/construction process.

BB. The Council will seek to make the most of straightforward opportunities for improvement such as loft and cavity wall insulation, draught proofing, improved heating controls and replacement boilers. The measures sought by the Council will be reasonable and proportionate to the costs of the extension/development proposed and the measures of CO_2 reduction benefit.

Climate resilience

CC. National and local climate change risk assessments demonstrate the current and predicted future impacts of climate change in the UK. The NPPF states that planning plays a key role in minimising vulnerability and providing resilience to the impacts of climate change. For the built environment, the priority areas for adaptation are considered to be flood management and sustainable drainage, water efficiency and minimising risks from overheating.

DD. For York, the anticipated annual costs of damage from climate related incidents is predicted to be between £95m and £158m by 2050. Developments which conduct a climate risk assessment and include adaptation measures to minimise climate related risks and costs of damage will be encouraged.

EE. The Met Office is due to issue an updated set of climate change projections for the UK in 2018, including revised predictions for temperatures and rainfall across the country for a range of emissions scenarios and timeframes. The current set of projections, which informed the UK Climate Change Risk Assessment and National Adaptation Plan, were issued in 2009 (UKCP09). The new projections may impact policy on climate change adaptation.

RECOMMENDATIONS FOR FURTHER INVESTIGATION

1. Opportunities for incorporating sustainable design and construction into the new policy

By withdrawing the Code for Sustainable Homes requirement from Policy CC2, a range of sustainable design and construction measures will be omitted from the CYC Local Plan (see Table 1). Some of these sustainability measures may already be, or could be, embedded elsewhere within the CYC Local Plan, subject to compliance with NPPF viability tests. Additionally, or alternatively, we recommend implementing a sustainability checklist as part of the Local Plan; this approach has been successful for some English councils (see Appendix 1 for a copy of the sustainability checklist used by the London Borough of Richmond upon Thames).

Table 1: Summary of sustainable design and construction features included in Code for Sustainable Homes

Category	Issues
Energy and CO_2 emissions	Dwelling emission rate (M) Fabric energy efficiency (M) Energy display devices Drying space Energy labelled white goods External lighting Low and zero carbon technologies Cycle storage Home office
Water	Indoor water use (M) External water use
Materials	Environmental impact of materials (M) Responsible sourcing of materials – basic building elements Responsible sourcing of materials – finishing elements
Surface Water Run-off	Management of surface water run-off from developments (M)

	Flood risk
Waste	Storage of non-recyclable waste and recyclable household waste (M) Construction site waste management Composting
Pollution	Global warming potential (GWP) of insulants NOx emissions
Health and Well-being	Daylighting Sound insulation Private space Lifetime Homes (M)
Management	Home user guide Considerate Construction Scheme Construction site impact Security
Ecology	Ecological value of site Ecological enhancement Protection of ecological features Change in ecological value of site Building footprint

Source: Code for Sustainable Homes Technical Guide (DCLG, 2010)

Table 2 demonstrates examples of the opportunities for sustainable design and construction features to be integrated into other policy areas within the CYC Local Plan. We recommend a full opportunity assessment is undertaken to identify which of the features previously included in the draft Policy CC2 via the former Code for Sustainable Homes, or those included in the current Home Quality Mark, could be viably integrated into other policy areas.

Table 2: Examples of potential for integrating sustainable design and construction features into other sections of the City of York Council Local Plan

Category	Relevant section of Local Plan
Energy and Carbon Dioxide Emissions	Policy CC1 & CC2 (low and zero carbon technologies); policies H8 & TI (cycle storage)
Surface Water Run-Off	Policies DP3, SS1 & ENV4 (flood risk); policy EN5 (sustainable drainage)

Policy CC3: District Heating and Combined Heat and Power Networks

Policy CC3: District Heating and Combined Heat and Power Networks

District Heating and Combined Heat and Power Networks

The development of decentralised energy, including (C)CHP distribution networks, is strongly supported and encouraged.

(1) All new developments are required to connect to (C)CHP distribution networks where they exist, or incorporate the necessary infrastructure for connection to future networks, unless it can be clearly demonstrated that doing so is not feasible or that utilising a different energy supply would be more sustainable.

(2) Proposals for development within heat priority areas and all sufficiently large or intensive developments must demonstrate that heating and cooling technologies have been selected in accordance with the following heating and cooling hierarchy, unless it can be clearly demonstrated that

such requirements are not economically viable and/ or that an alternative approach would be more sustainable:

i. Connection to existing (C)CHP distribution networks;
ii. Site wide renewable distribution networks including renewable (C)CHP;
iii. Site wide gas-fired (C)CHP distribution networks;
iv. Renewable communal heating/ cooling networks;
v. Gas-fired communal heating/ cooling networks;
vi. Individual dwelling renewable heating; and
vii. Individual dwelling heating, with the exception of electric heating.

(3) All (C)CHP systems are required to be scaled and operated in order to maximise the potential for carbon reduction. Developments that do not connect to or implement (C)CHP or communal heating networks should be 'connection-ready'.

(4) Energy Statements must be provided to demonstrate and quantify how development will comply with the energy requirements of this policy. Sustainability and energy statements should set out a level of detail proportionate to the scale of development. City of York Council will work proactively with applicants on major developments to ensure these requirements can be met.

DEFINITIONS

1. 'Decentralised energy' is energy that is generated near to the point of use, rather than at a large plant farther away and supplied through the national grid. Energy can refer to electricity, heating and cooling. The Council supports delivery of decentralised energy schemes with an aspiration that these will help achieve the targets set in the Climate Change Action Plan for York and support the decarbonisation of heat as outlined in the DECC National Heat Strategy 'the future of heating'.

2. (C)CHP refers to both combined cooling, heating and power (CCHP) and combined heating and power (CHP). The heating and cooling hierarchy should be followed when considering which technology to use and consideration should be given to whether the need for cooling can be met through passive cooling and other design features. The solution that results in the lowest carbon emissions should be selected.

3. Where the policy refers to 'communal heating/cooling networks', this refers to systems that distribute heating and cooling to a number of dwellings within one building but do not use (C)CHP as their source (i.e. they do not include power generation). 'Distribution networks' are systems that connect two or more distinct buildings.

4. Where (C)CHP distribution networks already exist, new developments are required to connect to them unless there are clear financial, technical or sustainability reasons why this is not feasible. When considering new power and heating systems, the heating and cooling hierarchy should be followed unless it can be clearly demonstrated that other sources of energy would be more sustainable, particularly through lower carbon emissions and taking full account of the benefits of providing both heating and cooling.

5. 'Connection-ready' means developments that are optimally designed to connect to a (C)CHP or communal distribution network on construction or at some point after construction. Developments will be 'connection-ready' if they use a centralised communal wet heating system rather than

individual gas boilers or electric heating and safeguard the appropriate pipe routes and plant room space for the installation of Heat Interface Units (see Table 3). Proposals must comply with the minimum requirements outlined in the Chartered Institute of Building Services Engineers (CIBSE) Code of Practice for Heat Networks.

Table 3: Indicative space requirements for heat exchange substation equipment within building plant rooms

Heating Capacity, kW (space heating + ventilation)	Approximate building size, m3	Space required by the heating equipment, m2
30	1,000-1,500	2
200	10,000-15,000	4
400	20,000-30,000	5
800	40,000-60,000	6

6. Heat priority areas can be defined as those areas which have an increased potential for viable district heating networks. The potential is determined by applying a set of criteria which considers areas with the highest linear heat densities, large residential heat loads and anchor loads (anchor loads are likely to have relatively high and stable heat demands and/or be in sectors more likely to participate in heat distribution projects such as hospitals, leisure centres or civic buildings) and diversity of heat demand (e.g. through mixed use development).

7. Where developments fall within heat priority areas, as shown on the Heat Priority Area Map, the provision of new (C)CHP distribution networks should be considered feasible unless it can clearly be demonstrated otherwise for financial, technical or sustainability reasons. Where single building networks are proposed, these should be capable of expanding to connect with other networks and heat sources in the future.

8. Outside the heat priority areas, the provision of new (C)CHP distribution networks should be considered feasible for sufficiently large or intensive developments unless it can be clearly demonstrated otherwise for financial, technical or sustainability reasons. Where sites have a variable density and it can be shown that the use of a (C)CHP distribution network across the whole of the site is not feasible, consideration must be given to a partial solution on the higher density elements of the site.

9. Sufficiently large or intensive developments are defined as any of the following:

a. residential only developments of at least 50 dwellings per hectare and/or at least 300 dwellings;
b. residential only developments of 35 dwellings or more that are located near a significant source of heat; and
c. mixed developments of 50 dwellings or more that include either two or more uses or a single use that would consume significant amounts of energy, such as a swimming pool.

10. (C)CHP systems should be scaled and operated in a way that produces the lowest carbon emissions. A CHP system only generates carbon and financial savings when it is running and the more it runs, the more energy efficient and cost-effective it will be. As a result, CHP will likely only be appropriate where there is a high and constant demand for heat. A recommended rule of thumb is at least 4,500 – 5,000 hours per year, depending on the application. The size of the system should be determined by the heat load and demand profile. If there is a high demand for cooling then CCHP, with the heat converted to cooling, may also be environmentally and economically viable. (C)CHP systems should be designed and operated to be energy efficient, with the selection of optimum operating

temperatures and measures to minimise heat losses. When introduced, all new distribution networks will also be expected to meet the CIBSE Code of Practice for Heat Networks.

REASONED JUSTIFICATION

District heating and (C)CHP

A. The NPPF requires the Local Plan to have a positive strategy to mitigate and adapt to climate change in line with the objectives and provisions of the Climate Change Act 2008. LPAs should adopt proactive strategies and design their policies to maximise renewable and low carbon energy development, and identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems. Therefore, the development of decentralised energy, and particularly (C)CHP distribution networks, is strongly supported. Given the distinctive nature of this policy compared with CC2, it is recommended that this could be detailed as a separate policy within the Local Plan.

B. According to the UK Government Heat Strategy over three quarters (79%) of the energy we use in our homes is for space and hot water heating, and generating heat causes around a third of UK greenhouse gas emissions. The Strategy outlines the significant role that (C)CHP could play in decarbonising the UK gas grid, offering a future-proofed, flexible and efficient solution to local energy supply.

C. The Climate Change Action Plan for York recognises that to achieve the ambitious 2020 city-level target of 40% carbon emissions reduction set in the Climate Change Framework, and the 2050 target of the Climate Change Act 2008, CYC will need to maximise decentralised energy and Combined Heat and Power schemes. One of the actions highlighted in the Action Plan to promote sustainable energy is to encourage the LPA to continue to work with future major developers on large scale sites to implement appropriate renewable/low carbon energy generation technologies through CYC's planning process.

D. The Leeds City Region Enterprise Partnership (LEP) has an ambition to provide 'cleaner, cheaper local heat' for the Leeds City Region. The District Heat Programme is the LEP's delivery vehicle to providing the above and plays a crucial role in bringing together project development activities into one coherent programme. This allows local authorities facing budget cuts to access funding, resources and expertise, bringing economies of scale and providing a platform for sharing best practice.

E. A Leeds City Region-wide heat mapping study in 2014 identified 91 financially viable district heating opportunities across the region, including in York. Two heat network schemes in York Central and the surrounding city of York and surrounding the area of York Hospital have since been further developed in feasibility studies which demonstrate financial viability. Therefore, there is a strong evidence base to support the viability of heat networks in York, and the Local Plan needs a positive strategy to encourage the opportunities to pursue low carbon district heating/ cooling networks.

F. The 2014 City of York Council Renewable Energy Study gives support for a policy which actively encourages renewable energy projects, and one which makes clear that developers would be supported when considering planning applications. The Study also assesses the potential for all of the Strategic Site proposed through the Plan. Of these, four have high potential for district heating (ST5: York Central, ST7:Land East of Metcalf Lane, ST15:Whinthorpe and ST23:Derwenthorpe), nine further sites have medium potential.

G. (C)CHP distribution networks can work at a range of scales from a single building up to a city and can provide low or zero carbon power, heat and cooling in a cost-effective, efficient and environmentally sound way. (C)CHP removes the need for individual gas boilers and large plant rooms, which provides flexibility in building design and maximises space for living and amenity.

H. Applying a hierarchical approach to the selection of heating and cooling technologies offers a reasoned method through which to make the most appropriate choice and to ensure that solutions are appraised logically. This is particularly worthwhile for heating systems installed in new developments, as space and water heating contributes 40-50% of the total carbon emissions for new buildings and there is significant potential to reduce this through the application of more efficient heating technologies.

I. All new developments should select heating systems in accordance with the heating and cooling hierarchy. It would be expected that the most appropriate solution for minor residential developments would be to incorporate future proofing measures to allow for the subsequent connection of the building to larger heat networks as they are construction. This could be achieved through the installation of communal wet-heating systems.

J. If a building is not correctly constructed then the network operator will be unable to connect it without costly remedial work, or it may be connected and adversely affect the operation and technical and financial performance of the network. Hence the need to have all networks be compliant with the requirements in the CIBSE Code of Practice for Heat Networks.

K. It is recommended that the Council undertakes early discussions about the potential of connecting to / establishing new heat networks in any new developments in York. Before the formal planning stage is reached, the Council has an important role to support developers, in order to facilitate the development of district heating networks across the city. This support should be initiated during pre-application discussions, including an explanation of requirements to meet Policy CC3.

RECOMMENDATIONS FOR FURTHER INVESTIGATION

1. It is recommended that CYC create a **Heat Priority Areas Map**, to define the areas within which the heating and cooling hierarchy applies. This can be made up of the areas of high heat density identified within the Leeds City Region Heat Mapping study (2012) the National Heat Map and the sites identified within the CYC Renewable Energy Study (2014).

2. It is recommended that CYC work proactively with developers of strategic sites to encourage the incorporation of district heating and CHP networks. Energy statements should be reviewed by a technical expert to ensure compliance with the heating and cooling hierarchy.

3. It is recommended that CYC continue to develop the evidence base for district energy in York through the progression of studies such as the York Central and York Hospitals heat network feasibility studies in order to provide a robust evidence base for district energy in York. Funding to undertake this work is available through the BEIS Heat Network Delivery Unit.

3. OVERARCHING RECOMMENDATIONS FOR FURTHER INVESTIGATION

1. Incorporate site-specific policies for strategic sites

It is recommended that CYC include site-specific policies relating to Renewable and Low Carbon Energy Generation, Sustainable Design and Construction and District Heating and Combined Heat and Power

Networks within the separate Strategic Site plans, including for garden villages. These policies should be informed by the specific characteristics of the site, the outcomes of site-specific Energy Masterplanning studies and discussions with landowners/developers.

2. Overarching SPD for the Climate Change section of the Local Plan

It is recommended that CYC consider producing an overarching SPD which underpins the Climate Change section of the Local Plan.

This could include a range of guidance and technical detail, including:

- Guidance on the information and level of detail expected to be included within Energy Statements and the methodology that should be followed when demonstrating compliance with Policies CC1, CC2 and CC3;
- Further guidance on the requirements for renewable and energy generation technologies (e.g. safety requirements for energy storage sites);
- Technical specifications for futureproofing and connecting to heat networks;
- Further guidance on demonstrating compliance with Policy CC2 as relates to building extensions, including justification for incorporating the entire property in the boundary of the assessment in order to reduce issues with thermal bridging which can be a result of varying levels of thermal conductivity of a building due to use of different fabric materials;
- Renewable energy site allocations; and
- Additional evidence base where appropriate, such as on new technology areas (e.g. energy storage, CCS).

Previous good examples of supplementary guidance include the London Heat Manual, produced by the GLA (although this wasn't published as formal supplementary planning guidance to allow flexibility for London Boroughs to use their own guidance) and guidance from Bristol City Council, Peak District National Park Authority and Moray Council.

4. COSTINGS FOR PROPOSED POLICIES

According to the NPPF, the costs of any requirements likely to be applied to development, such as requirements for affordable housing, standards, infrastructure contributions or other requirements should, when taking account of the normal cost of development and mitigation, **provide competitive returns to a willing land owner and willing developer** to enable the development to be deliverable (NPPF, ¶173).

It should be noted that the actual costs for the implementation of energy efficiency, low carbon, renewable and decentralised energy measures vary significantly according to a large variety of factors such as time (costs for green energy infrastructure reduce with time due to technology innovation), local circumstances, scale of application and suppliers. The estimates provided are based on a review of the most up-to-date evidence which provides costs for these measures. In some instances, we have recommended further investigation to refine these estimates and make them more tailored and specific to the context in York.

Policy CC1: Renewable and Low Carbon Energy Generation

As per the recommendation outlined, we recommend that further investigation would be necessary to provide a policy cost relating to the carbon reduction target outlined in Policy CC1. This would need to be specific to development in York and help inform the level of target to set.

However, in the absence of any specific evidence for York, we have considered the recent analysis conducted by Evora Edge for Guildford Borough Council. This study found that the average increase in construction costs to meet a 20% reduction in CO2 was between 1.51% and 1.81%.

Policy CC2: Sustainable Design and Construction

The costs for complying with Policy CC2 can be split into two parts: build costs and process costs. Build costs refer the cost of supply and installation of building materials and equipment to meet planning policy standards; build costs per property vary according to type and size of the home. Process costs refer to the time costs and fees associated with compliance, including consultancy services, internal administrative processes and compliance checks or auditing; process costs per property vary according to the scale of the development in addition to the type of home. In this section we present the total costs which would be 'extra-over' the costs of complying with Building Regulations.

Sustainable Design and Construction of a New Development

Energy efficiency

We have assumed that the cost of complying with the energy efficiency policy for a 19% reduction in Dwelling Emission Rate over Target Emission Rate in new homes is equivalent to the cost complying with the ENE 1 credits of the former Code for Sustainable Homes. No additional process costs to the Council are assumed as compliance will be checked using the same method as for checking compliance with Building Regulations Part L.

The Housing Standards Review: Cost Impacts (DCLG, 2014) report presents extra-over costs per property according to size of development: small (5 homes), medium (50 homes) and large (100 homes) and house

type. Table 4 demonstrates the estimated process costs to the developer and the council, table 5 sets out the build costs to the developer.

Table 4: Estimated process costs per property associated with achieving energy efficiency policy: 19% reduction in DER vs TER, equivalent to Code for Sustainable Homes Level 4 ENE 1 (based on a 3 bed house, DCLG, 2014)

	Small scheme (5 homes)	Medium scheme (50 homes)	Large scheme (100 homes)
Process cost to developer (consultancy, internal admin etc.)	£686	£136	£96
Process cost to council (checking compliance)	£0	£0	£0

Table 5: Estimated build costs per property associated with achieving energy efficiency policy: 19% reduction in DER vs TER, equivalent to Code for Sustainable Homes Level 4 ENE 1 (based on DCLG, 2014)

	1 bed apartment	2 bed apartment	2 bed terrace	3 bed semi - detached	4 bed detached
Option 1: Achieving energy standard with renewable heating	£125	£500	£469	£625	£938
Option 2: Achieving energy standard with fabric first & solar PV	£278	£412	£703	£812	£1,150

Water efficiency

We have assumed the cost of complying with the water efficiency policy for 110 litres per person per day in new homes is equivalent to the cost complying with the WAT 1 credits of the former Code for Sustainable Homes at Level 3 and 4. The CfSH standard is based on 105 litre per person per day for internal water use and 5 litres per person per day for external water use. No additional process costs to the council are assumed as compliance will be checked using the same method as for checking compliance with Building Regulations Part G.

Table 6: Estimated process costs per property associated with achieving water policy: 110 litres per person per day, equivalent to Code for Sustainable Homes Level 3 & 4 WAT 1 (based on DCLG, 2014)

	Small scheme (5 homes)	Medium scheme (50 homes)	Large scheme (100 homes)
Process cost to developer (consultancy, internal admin etc)	£37	£6	£6
Process cost to council (compliance)	£0	£0	£0

Table 7: Estimated build costs per property associated with achieving water efficiency policy: 110 l/p/d, equivalent to Code for Sustainable Homes Level 3 & 4 WAT 1 (based on DCLG, 2014)

	1 bed apartment	2 bed apartment	2 bed terrace	3 bed semi - detached	4 bed detached
Achieving 110 litres/person/day	£6	£6	£6	£9	£9

BREEAM

Costs for BREEAM compliance are typically presented as a percentage uplift over Building Regulation compliance, according to sector type. The City of York Local Plan Viability Study (PBA, 2014) estimates the costs of achieving BREEAM as follows:

- Very good: 0.17% for office development; 0.04% for warehouse development; 0.24% for supermarket development; and 0.14% for mixed use developments.
- Excellent: 0.77% for office development; 0.4% for warehouse development; 0.24% for supermarket development; and 1.58% for mixed use development.
- Outstanding: 9.8% for office development; 4.8% for warehouse development; 10.1% for supermarket development; and 4.96% for mixed use development.

Cost implications of recommendations for further investigation

We have recommended conducting an opportunities assessment to identify where and how sustainable design and construction measures which were previously included in the draft policy CC2 may be integrated elsewhere in the Local Plan (i.e. flood risk). We have also recommended including a Sustainability Checklist for encouraging high standards of sustainable design and construction. We have not assessed the economic viability of these recommendations within the scope of this review.

Any new approach for including sustainable design features for housing into the Local Plan is likely to place a greater responsibility on the building control or planning officers, and therefore increase process costs for the council, in comparison to the approach set out in the draft policy. It may now be the council's duty to check for compliance with the new policy, as opposed to the developer's duty to pay for a qualified and independent Code for Sustainable Homes assessor to determine compliance with the full range of sustainable design and construction requirements, and issue official CfSH certification.

Benefits of sustainable design and construction policies

- **Enhanced energy and water efficiency in new buildings**
  The benefits of sustainable design and construction to purchasers in terms of reduced annual energy and water costs, reduced climate risk and potentially healthier buildings should add to the marketability of the building. For developers and investors, higher sustainability standards can increase sales prices, lower refurbishment costs, reduce climate related risks, and enhance corporate reputation (World Green Building Council, 2013).

- **Improvements to existing buildings**
  The policies for retrofit, change of use and consequential improvements are designed to improve the energy efficiency of buildings, reducing operational energy costs and CO_2 emissions. For homes, this can have the added benefit of reducing risks of fuel poverty and health impacts and associated costs linked to excess cold, damp and mould in buildings. The Health Impact Assessment for private sector housing in York estimates the annual cost to society due to excess cold in homes is £1.3m, whilst damp and mould growth in homes is estimated to contribute an annual cost to society of £81k per year.

- **Climate adaptation**
  We recommend that good practice measures for climate change adaptation are encouraged through the Sustainability Checklist, with the aim of increasing the resilience of the built environment and minimising costs associated with climate related damage. It is estimated that by 2050 the annual cost of climate related damage for York will be in the region of £95m to £158m (Arup, 2010).

- **BREEAM Communities**
  Some councils have noted that BREEAM Communities can help to reduce process costs for compliance with masterplanning policy: "Not only does it [BREEAM Communities] halve the time that I spent … before I get to committee, but more importantly it seems to provide both a guarantee and an accreditation that a development will be sustainable as defined in the NPPF, which at the end of the day is what we all want, what we are all after." Louise Cutts, Development Management Officer, Eastleigh Borough Council in Pinpointing BREEAM Communities (UK Green Building Council, 2013)

Policy CC3: District Heating and Combined Heat and Power Networks

District heating and cooling can be seen as a cost neutral policy. The typical pricing model in new development is for the heat network operator to levy a connection charge on a per property basis, which is usually equal to or less than the alternative 'Business as Usual' cost to install a gas boiler in each property. In return, the operator would seek a demand guarantee, ensuring that all properties within the development are connected to the heat network once built, meaning that the subsequent revenues from the sale of heat are secured and de-risked.

This means that for the developer, the cost of district heating is offset by capital savings relating to the removed need for heating plant in each dwelling. There are also further gains to consider in district heating, including the space saving that a developer benefits from as a result of a removed need for plant rooms. This has particular impact in commercial development, as the space gains can translate to an increase in property value.

However, it remains possible to provide an estimate of the cost of connection charges across different property types, which are listed in Table 8:

Table 8: Estimates of connection charges across property types

Property type	Cost
Houses	£2,800 per unit
Townhouses	£2,350 per unit
Flats	£0 per unit

APPENDICES

Appendix 1: Best practice - Richmond Sustainability checklist

LBRUT Sustainable Construction Checklist - January 2016

This document forms part of the Sustainable Construction Checklist SPD. This document **must** be filled out as part of the planning application for the following developments: all residential development providing **one or more new residential units (including conversions leading to one or more new units)**, and all other forms of development providing **100sqm or more of non-residential floor space**. Developments including new non-residential development of less than 100sqm floor space, extensions less than 100sqm, and other conversions are strongly encouraged to comply with this checklist. Where further information is requested, please either fill in the relevant section, or refer to the document where this information may be found in detail, e.g. Flood Risk Assessment or similar. **Further guidance** on completing the Checklist may be found in the Justification and Guidance section of this SPD.

Property Name (if relevant): | Application No. (if known):

Address (include. postcode)
Completed by:

For Non-Residential
Size of development (m2)

For Residential
Number of dwellings

1 MINIMUM COMPLIANCE (RESIDENTIAL AND NON-RESIDENTIAL)

Energy Assessment

Has an energy assessment been submitted that demonstrates the expected energy and carbon dioxide emissions saving from energy efficiency and renewable energy measures, including the feasibility of CHP/CCHP and community heating systems? If yes, please tick. ☐

Carbon Dioxide emissions reduction

What is the carbon dioxide emissions reduction against a Building Regulations Part L (2013) baseline ☐

Policy DM SD 1 and London Plan Policy 5.2 (2015) require a 35% reduction in CO_2 emissions beyond Building Regulations 2013.

Percentage of **total** site CO2 emissions saved through renewable energy installation? ☐

1A MINIMUM POLICY COMPLIANCE (NON-RESIDENTIAL AND DOMESTIC REFURBISHMENT)

Please check the Guidance Section of this SPD for the policy requirements

Environmental Rating of development:

Non-Residential new-build (100sqm or more)
BREEAM Level: Please Select — Have you attached a pre-assessment to support this? ☐

Extensions and conversions for residential dwellings
BREEAM Domestic Refurbishment: Please Select — Have you attached a pre-assessment to support this? ☐

Extensions and conversions for non-residential buildings
BREEAM Level: Please Select — Have you attached a pre-assessment to support this? ☐

Score awarded for Environmental Rating:
BREEAM: Good = *0*, Very Good = 4, Excellent = *8*, Outstanding = *16*

Subtotal 0

1B MINIMUM POLICY COMPLIANCE (RESIDENTIAL)

Water Usage

Internal water usage limited to 105 litres person per day. (Excluding an allowance 5 litres per person per day for external water consumption). Calculations using the water efficiency calculator for new dwellings have been submitted. ☐ *1*

Subtotal 0

2. ENERGY USE AND POLLUTION

2.1 Need for Cooling — Score

a. How does the development incorporate cooling measures? Tick all that apply:

- Energy efficient design incorporating specific heat demand to less than or equal to 15 kWh/sqm ☐ *6*
- Reduce heat entering a building through providng/improving insulation and living roofs and walls ☐ *2*
- Reduce heat entering a building through shading ☐ *3*
- Exposed thermal mass and high ceilings ☐ *4*
- Passive ventilation ☐ *3*
- Mechanical ventilation with heat recovery ☐ *1*
- Active cooling systems, i.e. Air Conditioning Unit ☐ *0*

2.2 Heat Generation

b. How have the heating and cooling systems, with preference to the heating system hierarchy, been selected (defined in London Plan policy 5.6)? Tick all heating and cooling systems that will be used in the development:

- Connection to existing heating or cooling networks powered by renewable energy ☐ *6*
- Connection to existing heating or cooling networks powered by gas or electricity ☐ *5*
- Site wide CHP network powered by renewable energy ☐ *4*
- Site wide CHP network powered by gas ☐ *3*
- Communal heating and cooling powered by renewable energy ☐ *2*
- Communal heating and cooling powered by gas or electricity ☐ *1*
- Individual heating and cooling ☐ *0*

2.3 Pollution: Air, Noise and Light

a. Does the development plan to implement reduction strategies for dust emissions from construction sites? ☐ *2*

b. Does the development plan include a biomass boiler? ☐ *-*

If yes, please refer to the biomass guidelines for the Borough of Richmond, please see guidance for supplementary information. If the proposed boiler is of a qualifying size, you may need to completed the information request form found on the Richmond website. ☐ *-*

c. Please tick only one option below

- Has the development taken measures to reduce existing noise and enhance the existing soundscape of the site? ☐ *3*
- Has the development taken care to not create any new noise generation/transmission issues in its intended operation? ☐ *1*

d. Has the development taken measures to reduce light pollution impacts on character, residential amenity and biodiversity? ☐ *3*

e. Have you attached a Lighting Pollution Report? ☐ *-*

Subtotal 0

Please give any additional relevant comments to the Energy Use and Pollution Section below

3. TRANSPORT

3.1 Provision for the safe efficient and sustainable movement of people and goods

a. Does your development provide opportunities for occupants to use innovative travel technologies?

Please explain:

b. Does your development include charging point(s) for electric cars? ☐ *2*

c. **For major developments ONLY**: Has a Transport Assessment been produced for your development based on TfL's Best Practice Guidance?

If you have provided a Transport Assessment as part of your planning application, please tick here and move to Section 3 of this Checklist. ☐ *5*

d. **For smaller developments ONLY**: Have you provided a Transport Statement? ☐ *5*

e. Does your development provide cycle storage? (Standard space requirements are set out in the the Council's Parking Standards - DM DPD Appendix 4) ☐ *2*

If so, for how many bicycles?

Is this shown on the site plans? ☐ *-*

f. Will the development create or improve links with local and wider transport networks? If yes, please provide details. ☐ *2*

Subtotal 0

Please give any additional relevant comments to the Transport Section below

4 BIODIVERSITY

4.1 Minimising the threat to biodiversity from new buildings, lighting, hard surfacing and people

a. Does your development involve the loss of an ecological feature or habitat, including a loss of garden or other green space? (Indicate if yes) ☐ -2

If so, please state how much in sqm? _____ sqm

b. Does your development involve the removal of any tree(s)? (Indicate if yes) ☐

If so, has a tree report been provided in support of your application? (Indicate if yes) ☐

c. Does your development plan to add (and not remove) any tree(s) on site? (Indicate if yes) ☐

d. Please indicate which features and/or habitats that your development will incorporate to improve on site biodiversity:

Pond, reedbed or extensive native planting	6 ☐	Area provided:	_____	sqm
An extensive green roof	5 ☐	Area provided:	_____	sqm
An intensive green roof	4 ☐	Area provided:	_____	sqm
Garden space	4 ☐	Area provided:	_____	sqm
Additional native and/or wildlife friendly planting to peripheral areas	3 ☐	Area provided:	_____	sqm
Additional planting to peripheral areas	2 ☐	Area provided:	_____	sqm
A living wall	2 ☐	Area provided:	_____	sqm
Bat boxes	0.5 ☐			
Bird boxes	0.5 ☐			
Other	0.5 ☐			

Subtotal 0

Please give any additional relevant comments to the Biodiversity Section below

5 FLOODING AND DRAINAGE

5.1 Mitigating the risks of flooding and other impacts of climate change in the borough

a. Is your site located in a high flood risk zone (Zone 3)? (Indicate if yes) ☐ -2

Have you submitted a Flood Risk Assessment? (Indicate if yes) ☐ -

b. Which of the following measures of the drainage hierarchy are incorporated onto your site? (tick all that apply)

Store rainwater for later use	☐ 5
Use of infiltration techniques such as porous surfacing materials to allow drainage on-site	☐ 3
Attenuate rainwater in ponds or open water features	☐ 4
Store rainwater in tanks for gradual release to a watercourse	☐ 3
Discharge rainwater directly to watercourse	☐ 2
Discharge rainwater to surface water drain	☐ 1
Discharge rainwater to combined sewer	☐ 0

c. Please give the change in area of permeable surfacing which will result from your development proposal: _____ sqm

Please provide details of the permeable surfacing below *please represent a loss in permeable area as a negative number*

Subtotal 0

Please give any additional relevant comments to the Flooding and Drainage Section below

6 IMPROVING RESOURCE EFFICIENCY

6.1 Reduce waste generated and amount disposed of by landfill though increasing level of re-use and recycling

a. Will demolition be required on your site prior to construction? *[Points will only be awarded if 10% or greater of demolition waste is reused/recycled]* ☐ 1

If so, what percentage of demolition waste will be reused in the new development? _____ %

What percentage of demolition waste will be recycled? _____ %

b. Does your site have any contaminated land? ☐ 1

Have you submitted an assessment of the site contamination?	☐ 2
Are plans in place to remediate the contamination?	☐ 2
Have you submitted a remediation plan?	☐ 1
Are plans in place to include composting on site?	☐ 1

6.2 Reducing levels of water waste

a. Will the following measures of water conservation be incorporated into the development? (Please tick all that apply):

Fitting of water efficient taps, shower heads etc	☐ 1
Use of water efficient A or B rated appliances	☐ 1
Rainwater harvesting for internal use	☐ 4
Greywater systems	☐ 4
Fit a water meter	☐ 1

Subtotal 0

Please give any additional relevant comments to the Improving Resource Efficiency Section below

7	ACCESSIBILITY	
7.1	**Ensure flexible adaptable and long-term use of structures**	
a.	**If the development is residential,** will it meet the requirements of the nationally described space standard for internal space and layout?	☐ *1*
	If the standards are not met, in the space below, please provide details of the functionality of the internal space and layout	
AND		
b.	**If the development is residential**, will it meet Building Regulation Requirement M4 (2) 'accessible and adaptable dwellings'?	☐ *2*
	If this is not met, in the space below, please provide details of any accessibility measures included in the development.	
	For major residential developments, are 10% or more of the units in the development to Building Regulation Requirement M4 (3) 'wheelchair user dwellings'?	☐ *1*
OR		
c.	**If the development is non-residential,** does it comply with requirements included in Richmond's Design for Maximum Access SPG	☐ *2*
	Please provide details of the accessibility measures specified in the Maximum Access SPG that will be included in the development	

Subtotal 0

Please give any additional relevant comments to the Design Standards and Accessibility Section below

LBRUT Sustainable Construction Checklist- Scoring Matrix for *New Construction* **(Non-Residential and domestic refurb)** ***TOTAL*** ***0***

Score	Rating	Significance
80 or more	*A+*	Project strives to achieve highest standard in energy efficient sustainable development
71-79	*A*	Makes a major contribution towards achieving sustainable development in Richmond
51-70	*B*	Helps to significantly improve the Borough's stock of sustainable developments
36-50	*C*	Minimal effort to increase sustainability beyond general compliance
35 or less	*FAIL*	Does not comply with SPD Policy

LBRUT Sustainable Construction Checklist- Scoring Matrix for New Construction **Residential new-build**

Score	Rating	Significance
81 or more	A++	Project strives to achieve highest standard in energy efficient sustainable development
64-80	*A+*	Project strives to achieve highest standard in energy efficient sustainable development
55-63	*A*	Makes a major contribution towards achieving sustainable development in Richmond
35-54	*B*	Helps to significantly improve the Borough's stock of sustainable developments
20-34	*C*	Minimal effort to increase sustainability beyond general compliance
19 or less	*FAIL*	Does not comply with SPD Policy

Authorisation:

I herewith declare that I have filled in this form to the best of my knowledge

Signature _____ Date _____