

CARLYLE LAND
LIMITED



**Land south and east
of Adastral Park**
Suffolk

Energy Statement

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Contents

| | | |
|---|---------------------------|----|
| 1 | Introduction | 1 |
| 2 | Background Information | 1 |
| 3 | Policy Review | 2 |
| 4 | Energy Strategy | 9 |
| 5 | Sustainability Objectives | 12 |
| 6 | Summary | 14 |
| 7 | Limitations | 15 |

1 Introduction

- 1.1 Brookbanks Consulting Limited has been appointed by Carlyle Land Ltd and Commercial Estates Group to prepare an Energy Statement for the proposed residential development on land south and east of Adastral Park.
- 1.2 This report considers potential sustainability measures available to the development to meet national and local requirements while allowing for the practical implementation of the proposals in relation to the current and emerging building standards, including compliance with the UK Building Regulations.
- 1.3 The report therefore reviews technologies and systems that will ensure the development delivers a wholly sustainable settlement that encompasses measures meeting UK Building Regulations and accords with policy requirements.
- 1.4 Further to this, the report goes on to outline wider sustainability benefits for the application site and the existing areas, providing a commentary on a number of points including transport, waste and drainage.

2 Background Information

Location & Details

- 2.1 The proposed development Site boundary measures an area of approximately 113ha and comprises of land south and east of BT's Adastral Park. The Site is bound to the west by the A12 and to the north-west by Barracks Square, Gloster Road and Belts Avenue, which form boundaries to Adastral Park. The south of the Site is bound by Newbourne Road and Ipswich Road, with the east of the Site bound a by a footpath which separates the current surrounding agricultural land.
- 2.2 The proposed development area is outlined in red, as shown on Figure 2a, below:

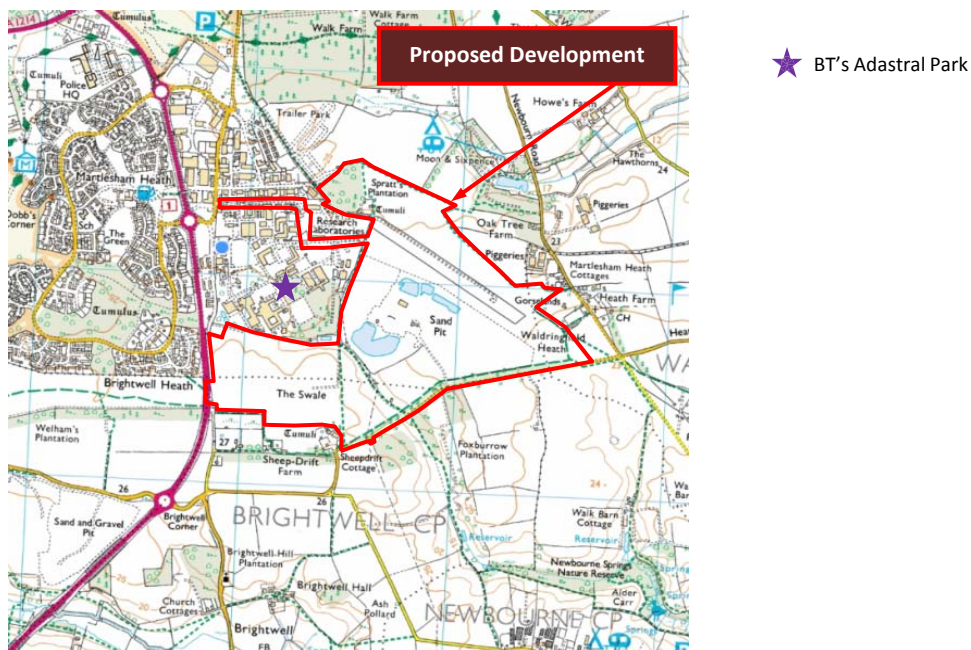


Figure 2a: Site Location

Development Criteria

- 2.3 Outline application for up to 2,000 dwellings, an employment area of c0.6ha (use Class B1), primary local centre (comprising use Classes A1, A2, A3, A4, A5, B1, C3, D1 and D2), secondary centre (comprising possible use Classes A1, A3, A5 and D2), a school, green infrastructure (including Suitable Accessible Natural Green Space (SANGS), outdoor play areas, sports ground and allotments/community orchards), public footpaths and cycleways, vehicle accesses and associated infrastructure.

3 Policy Review

National Umbrella Policy

- 3.1 National Policy for Low Carbon and Renewable Energy technology is informed by:
- National Umbrella Policy by way of the Energy White Paper (2003 & 2007), Renewable Energy Strategy (2009) and Climate Change Act (2008) published by the UK Government.
 - NPPF (2012) published by the UK Government.
 - Local Planning Policy
 - Code for Sustainable Homes (2007 / 2010) published by Building Research Establishment.
 - National Policy (2011 – 2015 updates)
 - UK Building Regulations Part L (2010/2013) published by the UK Government.
- 3.2 The main aim of these documents is to inform policy and provide guidelines to reduce the UK CO₂ emissions, as this is currently considered to be the largest man made contributor to climate change. The Climate Change Act 2008 (CCA08), is the first statutory legislation limiting CO₂ emissions anywhere in the world. CCA2008 mandates that carbon emissions are reduced by 80% by 2050 (against a 1990 baseline), with targets set at 34% by 2020 and 60% at 2030. It is this primary legislation that has driven regional and local planning policy.
- 3.3 The UK Government has set challenging targets for generating electricity from renewable sources. By 2015 15% of electricity generation nationally must be from renewable sources and by 2020, a total of 20% (Energy White Paper: 2003).
- 3.4 In 2009 the UK Renewable Energy Strategy reviewed the current targets and reaffirmed the methodology for the UK achieving a 15% share of total energy from renewable energy sources by 2020. Within this document, renewable technologies for electricity, heat and transport were considered in reaching the 15% target.
- #### National Planning Policy (NPPF 2012)
- 3.5 The National Planning Policy Framework (NPPF) was published in March 2012 and defines the overarching aims of the Government's sustainable development strategy.
- 3.6 The NPPF outlines that local authorities should adopt proactive strategies to mitigate and adapt to climate change and that to support the move to a low carbon future local authorities 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.

3.7 The NPPF stresses that the importance of sustainability in new developments is to ensure that during construction and operation the development minimises environmental impact. The Government is keen to limit the environmental impact of new construction projects through the reduction of CO₂ emissions. Consequently, it is imperative all new developments demonstrate sufficiently that no significant negative impact will be caused on what is regarded as the acceptable baseline, the UK Building Regulation standards, and how new developments will look to achieve this.

Local Planning Policy

3.8 In order to align with wider UK renewable energy and sustainable development policies, Local Planning Authorities have often adopted local planning policies requiring minimum provisions of Code for Sustainable Homes compliance. Minimum levels of energy or carbon savings over energy baseline have also often been specified, these to be achieved by way of renewable or low carbon energy generation measures on-plot or within the development, or indeed through building fabric enhancements, where the policy allows. Renewable energy / carbon saving targets in the order of 10-30% are common place.

3.9 The Local Planning Authority for the development is Suffolk Coastal District Council.

3.10 Local Policy for Low Carbon and Renewable Energy technology is informed by the:

- Suffolk Coastal District Local Plan – Core Strategy & Development Management Policies (July 2013)

3.11 Within this document, a number of policies cover climate change and energy. The most relevant extracts from these documents have been outlined below:

Development Objective 9: Climate Change

“Target: To mitigate against the effects of climate change and minimise the factors that contribute towards the problem.

To improve the energy efficiency of homes. Ensure that at least 10% of energy consumption in relevant new development is from renewable or low carbon energy.

Increase installed capacity of renewable energy generation.

Minimise the risk of flooding and coastal erosion and to allow flexibility for roll-back planning applications.

Related Policies: SP12, SP1, SP30, DM24 and DM28.”

Policy SP12: Climate Change

“The District Council will contribute towards the mitigation of the effects of new development on climate change by:

- *Ensuring development minimises the use of natural resources by utilising recycled materials where appropriate, minimises greenhouse gas emissions, incorporates energy efficiency, encourages the use of public transport, helps to reduce waste and minimises the risk of pollution;*
- *Encouraging and promoting schemes which create renewable energy where consistent with the need to safeguard residential amenity, the environment and the landscape;*
- *Minimising the risk of flooding and ensuring appropriate management of land within flood plains; and*
- *Improving the process of estuary and coastal management, incorporating and integrating social, recreational, economic, physical and environmental issues and actions;*

The approach towards sustainable means of construction is addressed in the Design section (Chapter 5) of this Core Strategy.”

Policy SP1: Sustainable Development

“Central to the Core Strategy for the future of the Suffolk Coastal district is the achievement of sustainable development. The Strategy in this respect will be to:

- (a) mitigate against and adapt to the effects of climate change;*
- (b) relate new housing development to employment services, transport and infrastructure. To achieve this a defined Settlement Hierarchy, itself based on sustainability principles, has been created and applied;*
- (c) achieve a local balance between employment opportunities, housing growth and environmental capacity;*
- (d) ensure the provision of the appropriate infrastructure in order to support existing and proposed communities;*
- (e) give priority to re-using previously developed land and buildings in and around built-up areas, where possible ahead of greenfield sites;*
- (f) promote the use of sustainable methods of construction, including materials, energy efficiency, water recycling, aspect etc.;*
- (g) reduce the overall need to travel but where travel is necessary, to better manage the transport network to enable it to function efficiently;*
- (h) enable a healthy economy, notably in the town centres and rural areas, taking advantage of regeneration opportunities where appropriate;*
- (i) enhance accessibility to services;*
- (j) conserve and enhance the areas natural historic and built environment;*
- (k) maintain and enhance a sense of place; and*
- (l) create and promote inclusive and sustainable communities in both urban and rural locations.”*

Policy DM24: Sustainable Construction

“The Council will expect all new developments, including redevelopment and refurbishment of existing buildings, to use energy, water, minerals, materials and other natural resources appropriately, efficiently and with care in order to reduce emissions linked to changes to the climate and take into account the effects of climate change.

In order to satisfy this, residential developments should:

Meet at least the following full Code for Sustainable Homes (CSH) star levels once successive updates to Part L of the Building Regulations come into force:

- (a) in 2010 – Code level 3*
- (b) in 2013 – Code level 4*
- (c) in 2016 – Code level 5*

Proposals for development should demonstrate an active consideration of the Suffolk Coastal Renewable & Low Carbon Technical Study and in particular, the Energy Opportunities Plan (EO P). The Site-Specific Allocations and Area Action Plan Development Plan Documents will set out any further requirements necessary in these areas.

As evidence of compliance, the Council will require the submission of an interim CSH certificate(s) prior to development commencement. A final CSH certificate of compliance will be required to be submitted upon development completion. Where applicants can demonstrate, to the satisfaction of the Council, exceptional difficulties in bringing a site to market as a result of direct additional costs for sustainable standards, the Council will be prepared to consider detailed information on the viability of a particular scheme, where justified, to reduce the building standard rating requirement.

It is proposed to develop supplementary guidance to assist developers in incorporating sustainable construction within their development plans.”

Policy DM28: Flood Risk

“Proposals for new development, or the intensification of existing development, will not be permitted in areas at high risk from flooding, i.e. Flood Zones 2 and 3, unless the applicant has satisfied the safety requirements in the Technical Guidance to the National Planning Policy Framework (and any successor). These include the ‘sequential test’; where needed the ‘exception test’ and also a site-specific flood risk assessment that addresses the characteristics of flooding and has tested an appropriate range of flood event scenarios. Where the proposal is one for housing, the geographical area of search for alternative sites will be determined by the following principles:

- (a) Affordable Housing: Where a site is within the physical limits boundary of a Major Centre, Town, Key or Local Service Centre and there is an identified need for the affordable housing, the geographical area of search for a sequentially preferable site is the physical limits boundary. If there are no sequentially preferable sites capable of accommodating the development, then the proposal will be supported in principle subject to passing the ‘exception test’ set out in the Technical Guidance to the National Planning Policy Framework. Where the scheme is to be approved, it will be subject to a S106 Agreement which ensures that the affordable housing is retained as such in perpetuity.*

Where a site is outside the physical limits boundary of a Town or Key Service Centre and is being promoted as an “exception site” the same principles will apply. However, the applicant will need to demonstrate that all other potential

“exception sites” have been examined and there are no sequentially preferable sites available in locations abutting or well-related to the particular settlement boundary. Affordable housing will not be permitted in areas of high risk of flooding within or outside other settlement categories.

(b) Open market housing: Where a site is within the physical limits boundary of a Major Centre, Town, Key or Local Service Centre and there is an identified need for the housing in order to meet the requirements as set out elsewhere in this Core Strategy or to maintain a 5-year supply of housing land, the geographical area of search for a sequentially preferable site is the housing market area. If there are no sequentially preferable sites capable of accommodating the development, then the proposal will be supported in principle subject to passing the ‘exception test’.

In the case of both affordable and open market housing, of particular relevance when applying the ‘exception test’ will be where significant redevelopment, or regeneration is required in order to achieve the Objectives or implement the Strategy for a particular settlement or settlement type.

In all other areas new housing should not be permitted within Flood Zones 2 or 3. Within all areas at high risk from flooding the proposal must be accompanied by a flood risk assessment which shows that the proposal:

(i) Is unlikely to impede materially the flow or storage of flood water or increase the risk of flooding elsewhere (for example, due to additional water run-off); and

(ii) Would not increase the number of people or properties at risk from flooding, by including appropriate mitigation measures to prevent this occurring.”

- 3.12 It is important to note that the enactment of the Deregulation Act 2015 has fundamentally affected the provision of local policy targets for sustainable development, which is discussed further below.

Code for Sustainable Homes

- 3.13 As part of the UK’s drive for delivering sustainable development, the BRE introduced various nationally led residential and commercial property standards. Becoming operational in March 2007, the Code for Sustainable Homes was launched by the Government as a national standard for the environmental assessment method for rating and certifying the performance of new homes.

- 3.14 A range of technical standards were published across various mandatory and non-mandatory compliance criteria, providing step changes over a ten year period to achieve carbon homes. The following implementation dates were specified for open market homes:

- 2010 Code 3
- 2013 Code 4
- 2016 Code 6

- 3.15 The Treasury Productivity Plan dated July 2015 has since stated that:

“The Government does not intend to proceed with the zero carbon Allowance Solutions carbon offsetting scheme, or the proposed 2016 increase in on-site energy efficiency standards, but will keep efficiency standards under review, recognising that existing measures to increase energy efficiency of new buildings be allowed time to become established”

- 3.16 The zero carbon Allowance Solutions are discussed further within this report, however, it should be acknowledged that further to the announcement of intention in the July 2015 Productivity Plan, the Government may formally abolish the zero carbon initiative.

- 3.17 The CfSH was not a mandatory implementation requirement, except on certain publically funded works, but rather sat alongside the UK Building Regulations as an enhanced standard, to be implemented where appropriate. It is common for minimum CfSH standards to be adopted as local planning policy.

- 3.18 Importantly, the Code for Sustainable Homes standard was withdrawn as a result of the Deregulation Act 2015, which is discussed further below.

National Planning Policy (2011 – 2015 updates)

- 3.19 **The Plan for Growth:** As a result of the economic downturn, the recently elected coalition Government in 2011 published The Plan for Growth. This wide ranging document outlines the measures the Government would implement to reverse problems with the economy and help it flourish without unnecessary constraints as barriers for success.
- 3.20 The document states that a review will be undertaken to ensure that standards and requirements are assessed, based upon cost-benefit, with the intention of reducing any unnecessary duplication and inconsistency within planning policies and construction standards; and help to remove unfeasible targets that make developments financially unviable. The report states:

“2.296 The Government will work with industry experts to identify and reduce duplication, redundancy and inconsistency in construction standards, based on cost-benefit analyses.

9) The Government is announcing the regulatory requirements for zero carbon homes, to apply from 2016. To ensure that it remains viable to build new houses, the Government will hold house builders accountable only for those carbon dioxide emissions that are covered by Building Regulations, and will provide cost-effective means through which they can do this.

2.297 The UK needs to deliver carbon savings in order to meet the Carbon Budgets to which the Government is committed. This means that the carbon footprint of new homes cannot be allowed to add to overall carbon reduction burdens.

2.298 Building Regulations cover carbon dioxide emissions from energy use through heating, fixed lighting, hot water and building services. They do not cover emissions related to energy use from cooking or from plug-in electrical appliances such as computers, as these are beyond the influence of house builders and will be addressed by other policies, for example the EU Emissions Trading Scheme.

2.299 The Government will introduce more realistic requirements for on-site carbon reductions, endorsing the Zero Carbon Hub’s expert recommendations on the appropriate levels of on-site reductions as the starting point for future consultation, along with their advice to move to an approach based on the carbon reductions that are achieved in real life, rather than those predicted by models. This will be complemented by cost-effective options for off-site carbon reductions, relative to the Government’s pricing of carbon, and Government will work with industry through consultation on how to take this forward.

- 3.21 It is clear, therefore, that The Plan for Growth recognised that the multitude of low carbon and renewable standards being driven through national and local planning policy caused “duplication, redundancy and inconsistency in construction standards”.

- 3.22 **DCLG / Stephen Williams Announcement 13 March 2014:** Following the direction of travel announced in The Plan for Growth, this Government announcement advised ***“Currently, house builders face a myriad of different standards to implement each time they build new homes in an area - with the standards imposed varying between areas, and often leading to duplication and even contradiction.”***

- 3.23 The Minister stated:

“The current system of housing standards is complicated and confusing and is ripe for reform.”

“That’s why we’re planning to make the whole system easier to understand and follow, consolidating housing standards so that all the requirements are in 1 place.”

“This will enable councils and developers to better work together to build high-quality, sustainable and secure homes in communities across the country.”

3.24 Other points raised in the announcement included:

“Today’s measures will reduce 100 standards to fewer than 10; bringing down the numbers of remaining pages of guidance from 1,000 to fewer than 100, saving councils and developers both time and money.

Housing standards that will be abolished include:

- *requirements for rainwater harvesting in places that don’t suffer from water shortages*
- *a requirement for more than 1 phone line to be installed - regardless of need*
- *a requirement for compost bins and secure sheds in gardens*

The measures also include scrapping rules that require house builders to get the same work checked by a range of different organisations.

Currently, a builder may have to have the same work checked by the planning authority, a Code for Sustainable Homes Assessor, a building control organisation, the Homes and Communities Agency and independent standard assessors - under the new system technical requirements will be assessed by building control bodies alone.”

3.25 This announcement also first recognised that only a few ‘optional’ building regulations will apply, ‘where it is right to do so’, stating:

“Under the changes, the new system will include “optional building regulations”, which will only apply where it is right to do so, with councils deciding whether they apply to developments being built in their areas.

These could include:

- *water efficiency - where a different standard may be available for areas facing water shortages - potentially saving households £100 a year in bills*
- *accessibility - where different standards may be needed for homes to be accessible for older people and wheelchair users - with optional building regulations that developers would need to abide by where it was applied, to avoid them facing a range of different measures in different areas.”*

3.26 In relation to energy, the announcement stated:

“Currently, in addition to existing building regulations councils can also impose locally-set targets for energy efficiency and renewable energy - imposing extra cost on new homes and leading to confusion and variation across the country.

Instead, with a new zero carbon homes standard coming into force from 2016, building on strengthened energy efficiency requirements in building regulations in 2010 and 2013 national standards have been catching up and overtaking local targets. In the future energy efficiency standards will be set through national building regulations.”

3.27 The Stephen Williams announcement therefore provides further weight to the original intent of The Plan for Growth, that there would be a rationalisation of standards, to provide a single national standard, delivered through the UK Building Regulations. Furthermore, the announcement recognises that ‘local targets’ have been overtaken by the ‘zero carbon homes’ standard, which is an important consideration.

- 3.28 **DCLG / Rt Hons Eric Pickles Announcement 2015:** On the 25th March 2015, the Rt Hon Eric Pickles gave a Governmental update on progress with the proposed changes to the planning system, including the proposed changes in relation to Housing Standards and Zero Carbon Homes. This stated:

“New homes need to be high quality, accessible and sustainable. To achieve this, the government has created a new approach for the setting of technical standards for new housing. This rationalises the many differing existing standards into a simpler, streamlined system which will reduce burdens and help bring forward much needed new homes.

The new system will comprise new additional optional Building Regulations on water and access, and a new national space standard (hereafter referred to as “the new national technical standards”). This system complements the existing set of Building Regulations, which are mandatory.

To implement this new regime, this written ministerial statement sets out the government’s new national planning policy on the setting of technical standards for new dwellings. This statement should be taken into account in applying the National Planning Policy Framework, and in particular the policies on local standards or requirements at paragraphs 95, 174, and 177, in both plan making and decision-taking.”

- 3.29 The statement is therefore clear in confirming the revised national planning policy, making reference to the single source of national standards as part of national planning policy, emphasising the applicability in relation to NPPF Paragraph 95, which relates to ‘low carbon’ development and Paragraphs 174 and 177, which relate to the delivery of local policies and standards. Equally clear is that the optional elements of the Building Regulations hereon relate to water and access and do not include any provision on energy or carbon.

- 3.30 Importantly, the statement confirmed:

“From the date the Deregulation Bill 2015 is given Royal Assent, local planning authorities and qualifying bodies preparing neighbourhood plans should not set in their emerging Local Plans, neighbourhood plans, or supplementary planning documents, any additional local technical standards or requirements relating to the construction, internal layout or performance of new dwellings. This includes any policy requiring any level of the Code for Sustainable Homes to be achieved by new development; the government has now withdrawn the code, aside from the management of legacy cases. Particular standards or requirements for energy performance are considered later in this statement.

Local planning authorities and qualifying bodies preparing neighbourhood plans should consider their existing plan policies on technical housing standards or requirements and update them as appropriate, for example through a partial Local Plan review, or a full neighbourhood plan replacement in due course. Local planning authorities may also need to review their local information requirements to ensure that technical detail that is no longer necessary is not requested to support planning applications.”

- 3.31 Having specific relevance to this development, the announcement states:

“From the date the Deregulation Bill 2015 is given Royal Assent until 30 September 2015: The government’s policy is that planning permissions should not be granted requiring, or subject to conditions requiring, compliance with any technical housing standards other than for those areas where authorities have existing policies on access, internal space, or water efficiency.”

- 3.32 The Deregulation Bill 2015 was given Royal Assent on 27th March 2015. This resulted in a shift away from locally set sustainability targets to single national compliance requirements.

Summary of policy in relation to this Development

- 3.33 Local planning policy relating to Suffolk Coastal identifies various low carbon / renewable energy policies through the policies identified earlier within Section 3 of this report. These policies largely aligns to those recognised in The Plan for Growth, the Stephen Williams announcement of March 2014 and the Rt Hon Eric Pickles announcement of 25th March 2015 and Deregulation Act 2015 as causing unnecessary **“duplication, redundancy and inconsistency in construction standards”**. The Deregulation Act 2015 has superseded and effectively withdrawn the applicability of these standards in relation to the local policies set out earlier in Section 3.
- 3.34 Nonetheless, the principles underpinning local policy are in all important respects supported by the planning proposals for this development, as set out in this report.

4 Energy Strategy

National Policy

- 4.1 With the abandonment of the Code for Sustainable Homes and the array of local policy on energy and sustainable development, national standards are now defined by the UK Building Regulations. In relation to energy, the Governmental objective of delivering zero carbon homes by 2016 remains, with the Zero Carbon Hub taking an operational responsibility for achieving the same.
- 4.2 The zero carbon obligations relate to energy used in providing space heating and cooling, hot water and fixed lighting, as outlined in Part L1A of the Building Regulations. Emissions resulting from cooking and ‘plug-in’ appliances such as computers and televisions are excluded from this policy.
- 4.3 According to the Zero Carbon Hub, three core requirements must be achieved for a home to qualify as zero carbon, viz:
1. The fabric performance must, at a minimum, comply with the defined standard known as the Fabric Energy Efficiency Standard (FEES).
 2. Any CO₂ emissions that remain after consideration of heating, cooling, fixed lighting and ventilation, must be less than or equal to the Carbon Compliance limit established for zero carbon homes.
 3. Any remaining CO₂ emissions, from regulated energy sources (after requirements 1 and 2 have been met), must be reduced to zero.

Requirement 3 may be met by either deliberately ‘over performing’ on requirements 1 and 2 so that there are no remaining emissions, or by investing in Allowable Solutions.

- 4.4 These obligations can be graphically expressed as:

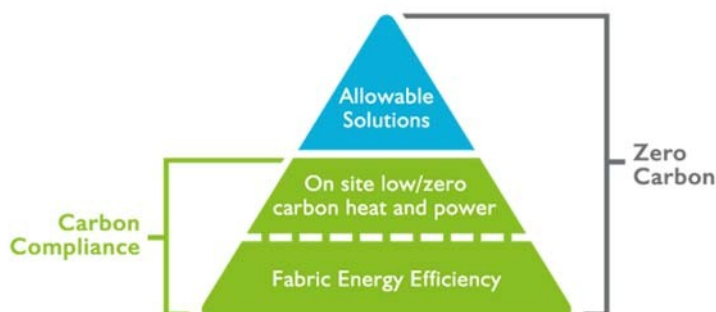


Figure 4a: Zero Carbon Policy – Zero Carbon Hub

4.5 The Zero Carbon Hub defines Fabric Energy Efficiency Standard (FEES) as follows:

“The Fabric Energy Efficiency Standard (FEES) is the proposed maximum space heating and cooling energy demand for zero carbon homes. This is the amount of energy which would normally be needed to maintain comfortable internal temperatures and in a dwelling this can be influenced by:

- ***Building fabric U-values***
- ***Thermal bridging***
- ***Air permeability***
- ***Thermal mass***
- ***External heat gain (solar)***
- ***Internal heat gains such as metabolic activity or as a by-product of services.***

FEES should ensure that a good minimum standard for fabric (the longest-lasting part of a home) will be embedded in all new homes. It is measured in kWh/m²/yr and is therefore not affected by carbon emission factors for different fuel types.

The Fabric Energy Efficiency Standard allows flexibility in design approach, and can be achieved in a variety of ways and with combinations of different materials or product specifications.”

4.6 Put simply, this element of the zero carbon triangle relates to achieving a high level of performance of the building fabric to limit the requirements for energy use.

4.7 The Zero Carbon Hub defines Carbon Compliance as follows:

“The Carbon Compliance limit is the maximum permitted amount of CO₂ (and other greenhouse gases expressed as equivalents) arising from a home’s heating, cooling, hot water use, fixed lighting and ventilation systems.

This can be achieved by:

- ***Ensuring an energy efficient approach to building design.***
- ***Reducing CO₂ emissions on-site through low and zero carbon technologies.***

The Carbon Compliance Limit is expressed in kgCO₂(eq)/m²/year to provide a clear link with Government’s carbon reduction strategy, and it can be met by use of a wide range of heating/fuel types.”

4.8 Carbon compliance essentially relates to the site based provision of low carbon heat and power technologies such as high-efficiency boilers, photovoltaic panels or solar thermal provision et al.

4.9 The Zero Carbon Hub defines Allowable Solutions as follows:

“Allowable solutions are part of the Government’s strategy for the delivery of mainstream zero carbon new homes from 2016. Through the mechanism of Allowable Solutions, the carbon emissions which cannot be cost-effectively off-set on-site, after Carbon Compliance has been achieved, will be tackled through nearby or remote measures.

The specific framework under which Allowable Solutions will operate has not been defined yet.”

4.10 Allowable Solutions will therefore reduce the remaining carbon emissions after FEES and Carbon Compliance to zero. However, Allowable Solutions may not be needed where the development overperforms with the FEES and Carbon Compliance to achieve zero carbon.

4.11 Current strategies for Allowable Solutions are:

- 4.12 **Type 1:** Developers payments to an Allowable Solution fund delivering carbon saving projects, most likely led by Local Authorities.
- 4.13 **Type 2:** Delivery of a carbon saving project within the development. In practice, only the largest developments are likely to support Type 2 Allowable Solutions.
- 4.14 **CHP / District Heating:** The provision of district heating has nationally been recognised for some time as having potential for large scale developments to provide community heat and power installations that reduce CO₂ generation when compared with traditional gas and electricity installations. Unfortunately, the significant infrastructure requirements are such that only the very largest of new developments have the potential to provide such installations in a viable manner, which has led to only a small number being implemented nationally, primarily on developments that are heavily subsidised by Government funding.
- 4.15 Recognising this issue, the Plan for growth in 2010 stated:
- “2.299 The Government will introduce more realistic requirements for on-site carbon reductions, endorsing the Zero Carbon Hub’s expert recommendations on the appropriate levels of on-site reductions as the starting point for future consultation, along with their advice to move to an approach based on the carbon reductions that are achieved in real life, rather than those predicted by models. This will be complemented by cost-effective options for off-site carbon reductions, relative to the Government’s pricing of carbon, and Government will work with industry through consultation on how to take this forward.”***
- 4.16 Preliminary assessments completed by Brookbanks for this development, with the assistance of certain cost information from Vital Energy, suggests that a straightforward district heating system at this development, without adding the additional cost burden of a full CHP power generation engine would cost in the order of £7,000 - £8,000 per dwelling. Including CHP is likely to add several thousands of pounds per plot to the implementation cost.
- 4.17 Given the need to deliver challenging carbon reduction levels by 2016 and the unrealistic financial burden that this obligation places on development if managed at a site level, The Plan for Growth, Stephen William’s announcement and now the Deregulation Act 2015 has followed a common trajectory in working towards ***“more realistic targets”*** and ***“cost effect options for off-site carbon reductions”***. In practice, this means that many of the carbon savings will be delivered through Allowable Solutions, which are explained above.
- 4.18 Where a district heating system is delivered on a large scale, through Allowable Solutions, significant cost savings can be made through economies of scale. The proposed development will therefore comply with any adopted Allowable Solutions delivered through policy in due course, rather than the alternative of implementing a CHP District heating System, which would represent the ***duplication, redundancy and inconsistency*** approach identified in The Plan for Growth, which no longer forms the basis of national planning and energy policy.

Strategy

- 4.19 Given the significant changes in national sustainable development and zero carbon resulting from the Deregulation Act 2015, the adoption of locally set targets is no longer permissible, which is made clear through the legislation and the Government announcements. The development must therefore comply with the new national framework, which is being delivered through the UK Building Regulations.
- 4.20 At this stage, the performance level criteria for FEES, Carbon Compliance and as such Allowable Solutions have yet to be defined. The UK Building Regulations Part L 2013 provides the present day FEES obligations, these being circa 15% below the current Full FEES level being promoted. Development at this development will comply with these transitional FEES requirements and eventually full FEES, enforced through the Building Regulations. At present, the Carbon Compliance and Allowable Solution requirements are emerging through national policy. The proposed development will therefore look to comply with national policy as these are defined and required in the development by legislation in due course.

5 Sustainability Objectives

5.1 This section of the report identifies a range of wider sustainability measures that have been incorporated into the design of this development to comply with the Suffolk Coastal District Council aspirations for sustainable development.

Design & layout

5.2 A high quality of design is proposed throughout the proposed development, including the new streets and open spaces, which together with ongoing maintenance will help to promote respect towards the environment and therefore increase its use, safety and the overall sustainability benefits of the application site. Measures will also be incorporated to minimise pollution elements such as light and noise.

5.3 The detailed design and layout of the proposed development will adopt the UK Building Regulations as a minimum benchmark. These Regulations encourage the conservation of heat through means including minimising external walls and roof areas, reducing the potential for heat loss.

5.4 It is through this same design and layout that orientation of buildings will be designed taking into account solar benefit. As such, the orientation of the individual buildings will be designed to respond to opportunities for passive measures of shading and cooling. The recent step changes in the 'Building Regulations Part L' have incorporated energy efficiency and further reductions in CO₂ through improved material standards in heating, insulation and glazing. These measures will ensure good levels of energy sustainability are achieved.

5.5 Planting and landscaping methods will be further developed at the detailed design stage, through means such as green buffers around and throughout the application site boundary. It is these measures that will account for the shelter of buildings from prevailing cold winds in the winter, whilst providing the necessary shading in the summer without the loss of natural light.

5.6 Individual plot lighting and ventilation will also further be developed during the detailed design phase to deliver the development in a sustainable manner while targeting the current Building Regulations requirements.

5.7 Embodied energy of materials used during construction will be minimised through responsible sourcing of raw materials whilst full consideration will be given to minimising waste and promoting re-use and recycling of materials.

5.8 The following paragraphs identify further details on the sustainable design benefits.

Community

5.9 The layout of the proposed development and facilities will ensure that the application site offers:

- A compact and well-designed layout providing recreation and exercise space for all residents of the proposed development within a five minute walk.
- Promote walking and cycling to destinations using new and existing foot and cycle links.
- Provision of multifunctional green spaces through a well-connected green network easily accessible to all.
- Enhance Bio-diversity by retaining existing trees and vegetation where possible on site and integrate with new green infrastructure network.
- Provision of spaces that encourage sustainable living and a sense of community pride and ownership.
- A new all through school on site.
- Two new local centres comprising retail and commercial opportunities.

Place Making

5.10 Provision has been made for a variety of public spaces and the local design principles such as grain, scale and materials will be considered to provide a recognisable local aesthetic and visually pleasing environment.

Transport and Movement

- 5.11 Full details of the sustainable transport measures are contained within the Transport Assessment and Travel Plan document submitted as part of the application. The proposed development will be connected to the surrounding areas by a range of modes, including walking, cycling and public transport. The transportation strategy will:
- Reduce on site carbon emissions through promoting low impact travel means i.e. pedestrian and cyclist movement.
 - Encourage more frequent use of public transport, by having waiting areas which are safe and weather resistant.
 - Ensure management of construction traffic.
 - Create a traffic management plan which encourages the safe passage of vehicles through the development, at an appropriate speed.
 - Promote alternative transport methods including car club/share for residents and employees.
 - Provide sufficient convenient and safe facilities for walking and cycling within the site and into the town centre.
 - Facilities to encourage cycling, such as road designs incorporating safe cycle paths and buildings including cycle parking.
 - Create a network of safe walking and cycle routes under good natural surveillance.
 - Enable residents to use and enjoy space around homes whilst maintaining vehicular access through the use of home zones or equivalent.
- 5.12 The application site occupies an excellent location for development to be sustainable, being close to established residential and employment areas.
- 5.13 Sustainable transport such as walking and cycling have been given priority in the proposed development, with the structure providing legible and direct routes that follow desire lines.
- 5.14 Links to existing public rights of way have been incorporated into the site and new footpaths and cycle routes are proposed connecting to those, reinforcing the sustainable transport and pedestrian links. Movement for pedestrians and cyclists is fully integrated into the application site with designated paths.

Ecology

- 5.15 Ecological issues have been addressed in detail within the Environmental Statement and this document simply highlights that the main ecological strategy will:
- Protect and enhance the biodiversity of existing habitats and ecology.
 - Improve the strengthened ecological value of the site and existing habitats.
 - Support the viability of species by linking with wildlife corridors.
 - Select appropriate locally occurring native trees and shrubs.

Water Resources

- 5.16 Measures will be introduced to restrict water consumption to a maximum of 125 litres per day per person. This requirement will be achieved through the use of water efficient fittings, such as delayed inlet valves and flow restrictors, and water efficient appliances, such as low flush WC's.
- 5.17 OFWAT confirm that for the period of 2009-2010 the average water consumption in the UK equated to 143.2 litres per person per day.
- 5.18 This strategy will provide wider benefits to the local areas by ensuring water demand is substantially reduced below the existing rates and that water resources are capable of accommodating the demands of the application site and surrounding area.

Sustainable Drainage

- 5.19 The use of Sustainable Drainage Systems (SuDS) will help reduce the volume and rate of surface water run-off from the application site. The drainage strategy will employ storage methods where viable such as ponds, in order to attenuate flow, remove pollutants, and ensure that runoff to existing watercourses is restricted according to the existing hydrology of the application site. All SuDS elements will be sized to accommodate increased flows from potential future climate change.
- 5.20 Through the use of permeable hard surfaces and soakaway drainage, the site-wide water management and drainage solution will avoid any increase in surface water run-off to the natural watercourses, with the proposals set out in the Flood Risk Assessment significantly reducing the level of surface water runoff from the proposed development.

Waste

- 5.21 The approach to delivering a sustainable waste management system will begin by providing ample segregated waste storage space. External storage for recycled waste will be well considered, and integrated into the building envelope or boundary condition to ensure an attractive solution to home-collection of waste for recycling.
- 5.22 Consultation with the local authority and the local waste management contractor will determine the detailed approach to delivering waste minimisation and high levels of recycling. During construction full consideration will be given to minimising waste, promoting reuse and recycling materials.

Resources

- 5.23 A careful approach will be considered for the efficient and safe use of development resources. The following factors will be implemented:
- Material resources will be efficiently managed and sourced with respect to the area.
 - Construction and operational waste will be managed and the proportion sent to landfill minimised through efficient design, waste segregation, reuse and recycling.
 - Heritage or archaeologically important features will be conserved or preserved where appropriate.
 - Measures will be taken to reduce the environmental impact of materials used during the construction of the infrastructure and throughout the whole development.
 - Sustainably sourced and managed materials will be used.
- 5.24 Appropriate steps will also be taken to:
- Protect the quality of groundwater and / or water courses from contaminated run-off.
 - Where private external space is provided, enable on-site composting of appropriate kitchen and/or garden waste.
 - Provide appropriate space for the storage of recyclables, in locations accessible to collection vehicles, within the site.
 - Produce a waste management plan prior to commencement of work on site, to limit the environment.

6 Summary

- 6.1 This document sets a range of sustainability measures that will be implemented at the proposed development to meet national and local policy requirements in accordance with the guidelines in the NPPF and Deregulation Act 2015 whilst maximising and adding additional value to the local growth areas.
- 6.2 The report outlines measures in which the proposed development will look to incorporate low carbon measures and increase efficiency in line with national policy.

Energy Statement

- 6.3 The developer's desire to deliver a high quality settlement with enhanced living standards tackling the issues of CO₂ emissions and fuel poverty will be underpinned comprehensively by UK Building Regulation and integrated into each property.
- 6.4 The proposals provide good sustainability credentials across the proposed development that will result in tangible benefits to the environment and to occupiers of the development. Along with reductions in water usage, the proposals substantially reduce the demand on fossil fuels and associated CO₂ production, all corresponding to significant reductions in household bills.

7 Limitations

- 7.1 The conclusions and recommendations contained herein are limited to those given the general availability of background information and the planned usage of the application site.
- 7.2 Third party information has been used in the preparation of this report, which Brookbanks Consulting Ltd, by necessity assumes is correct at the time of writing. While all reasonable checks have been made on data sources and the accuracy of data, Brookbanks Consulting Ltd accepts no liability for same.
- 7.3 The benefits of this report are provided solely to Carlyle Land Ltd and Commercial Estates Group for the proposed development at land south and east of Adastral Park.
- 7.4 Brookbanks Consulting Ltd excludes third party rights for the information contained in the report.

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