AUGUST 2023

Sustainability & Energy Statement

Land east of Church Lane, Lydden

Iceni Projects Limited on behalf of
Quinn Estates Ltd

August 2023

ICENI PROJECTS LIMITED ON BEHALF OF QUINN ESTATES LTD

Sustainability & Energy Statement
LAND EAST OF CHURCH LANE, LYDDEN

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1. EXECUTIVE SUMMARY

1.1 Iceni Projects Ltd has been commissioned by Quinn Estates Ltd to produce a Sustainability & Energy Statement to support the proposed development of the Land east of Church Lane, Lydden.

1.2 This outline application proposes the erection of 23 dwellings, with associated access, parking and landscaping.

1.3 Sustainability is a core consideration of the application and has been incorporated from the project outset. Resource and water efficiency have been maximised, whilst the production of waste and pollution is to be minimised, thus ensuring the impact of the proposals on its immediate surroundings and the environment as a whole is minimised.

1.4 By designing to rigorous energy standards, employing electric-only systems, and integrating renewable energy technologies, the application will respond directly to the Climate Emergency declared by the Council in January 2020. These measures combine to provide a significant carbon dioxide emissions saving compared to the Part L:2021 baseline, aiming to significantly exceed the requirements of Dover District Council.

1.5 Through the use of electric-only systems for space heating and hot water, the scheme will be fossil fuel free, and compatible with the Government's intended trajectory to achieve net zero carbon emissions by 2050.

1.6 Consideration has been given to the Dover District Council Core Strategy (February 2010) and the draft Dover District Local Plan to 2040 (Regulation 19 Submission; October 2022) in the overall formulation of this strategy, aiming to minimise the environmental impact of the proposed development during construction and operation, and to ensure the development is constructed to rigorous sustainability standards.

1.7 The proposed strategy has been based around the objectives of the Core Strategy policy CP 5 and the draft Local Plan policies SP1, CC1, CC2, CC4, CC5, CC6 and CC8. In summary, based on this strategy, the proposed development will;

- make efficient use of land;
- incorporate low-impact materials, according to the BRE Green Guide to Specification;
- minimise internal water consumption to 105 litres per person per day;
- incorporate measures to improve site biodiversity, including biodiverse planting;

- ensure air, noise, light and water pollution are minimised as far as possible;
- minimise waste production during construction and maximise the proportion of waste to be diverted from landfill;
- minimise energy demand through the specification of low U-values, low air permeability and low thermal bridging to reduce heat loss;
- be fossil fuel free, utilising electric-only systems, such as air source heat pumps (ASHPs) to serve the space and water heating demands of the proposed dwellings;
- utilise renewable technology, such as rooftop photovoltaic (PV) panels, to provide renewable electricity; and
- achieve a significant reduction in CO_2 emissions for the proposed dwellings, following the Energy Hierarchy methodology.

1.8 Overall, the proposals constitute sustainable development in accordance with national and local policy requirements and will provide a development that seeks to promote these principles in operation.

2. INTRODUCTION

2.1 Iceni Projects Ltd has been commissioned by Quinn Estates Ltd to produce a Sustainability & Energy Statement to support the proposed development of the Land east of Church Lane, Lydden.

Report Objective

2.2 This document details the sustainable design and construction measures adopted by the proposed development and gives an overview of the design proposals that will ensure the development operates in a sustainable manner over the lifespan of the scheme. The Sustainability & Energy Statement report headlines will provide a framework for the project team to operate consistently within sustainability guidelines set out by Dover District Council.

2.3 The report is structured to meet these guidelines as follows:

- Section 3 discusses the planning context and policies which are relevant to sustainability;
- Section 4 discusses the development response to the policy drivers for sustainability;
- Section 5 sets out the development's energy strategy to minimise CO_2 emissions; and
- Section 6 summarises the development's design response.

Site and Surroundings

2.4 The application site (Appendix A1) is located within the settlement of Lydden, which is approximately 6.3 km northwest of the centre of Dover. The site is bounded by Lydden Court Farm and associated land to the north and northwest. Properties fronting onto, and a section of, Church Lane form the western boundary of the site. The eastern and southern boundaries of the site are formed by residential properties fronting onto Canterbury Road. Public Right of Way (PRoW) PR116 passes along the eastern edge of the site.

2.5 The application site itself comprises approximately 1.77 hectares of agricultural land, with no buildings present on-site. The proposed development site is allocated with the Draft New Dover Local Plan to 2040 (SAP47) for the development of up to 30 dwellings.

The Proposed Development

2.6 The site originally had an outline application approved in July 2021 (ref. 20/00419), comprising the following:

"Outline proposal for the erection of up to 23 dwellings including affordable housing together with associated parking, infrastructure and open space; with all matters reserved except access."

2.7 The approximate location and site boundary of the site are shown in Figure 2.1 below.

Figure 2.1 The Site

Site location

2.8 The proposed site layout of the scheme is displayed in Figure 2.2, below.

Figure 2.2 Proposed Site Layout

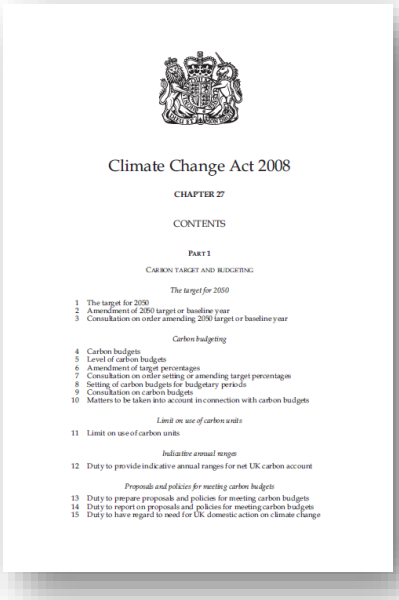
3. PLANNING AND REGULATORY CONTEXT

3.1 Built environment sustainability is incorporated within policy and regulation at a national and local level, as set out below.

National

Climate Change Act 2008

3.2 On 26th November 2008, the UK Government published the Climate Change Act 2008; the world's first long-term legally binding framework to mitigate against climate change. Within this framework, the Act sets legally binding targets to increase greenhouse gas emission reductions through action in the UK and abroad from the 60% target set out in the Energy White Paper, to 80% by 2050.



Climate Change Act 2008

CHAPTER 27

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PART 1

CARBON TARGET AND BUDGETING

The target for 2050

1 The target for 2050
2 Amendment of 2050 target or baseline year
3 Consultation on order amending 2050 target or baseline year

Carbon budgeting

4 Carbon budgets
5 Level of carbon budgets
6 Amendment of target percentages
7 Consultation on order setting or amending target percentages
8 Setting of carbon budgets for budgetary periods
9 Consultation on carbon budgets
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Limit on use of carbon units

11 Limit on use of carbon units

Indicative annual ranges

12 Duty to provide indicative annual ranges for net UK carbon account

Proposals and policies for meeting carbon budgets

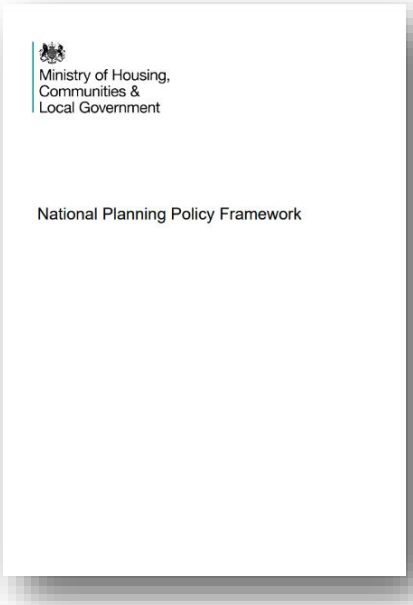
13 Duty to prepare proposals and policies for meeting carbon budgets
14 Duty to report on proposals and policies for meeting carbon budgets
15 Duty to have regard to need for UK domestic action on climate change

3.3 As required under Section 34 of the Climate Change Act, the Sixth Annual Carbon Budget was accepted by the Government in April 2021. This sets out a budget for UK emissions for the period 2033 – 2037.

3.4 Following a commitment in June 2019, the Climate Change Act has been amended to target net zero carbon emissions by 2050.

National Planning Policy Framework

3.5 The Ministry of Housing, Communities & Local Government determines national policies on different aspects of planning and the rules that govern the operation of the system. Accordingly, the National Planning Policy Framework (NPPF), which came into force in March 2012 and was updated in February 2019, aims to strengthen local decision making. Additional updates have since been made through the latter half of 2020 and in January and July 2021 to reflect changes related to use classes, permitted development rights, the calculation of housing need, and requirements to achieve beauty alongside sustainability.



Ministry of Housing, Communities & Local Government

National Planning Policy Framework

3.6 Paragraphs 10 and 11 of the NPPF confirm that at the heart of this document is a "*presumption in favour of sustainable development*", and that development proposals that accord with an up-to-date development plan should be approved without delay.

3.7 Paragraph 7 states that the purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs.

3.8 Achieving sustainable development means that the planning system has three overarching activities, which are interdependent and need to be pursued in mutually supportive ways, so that opportunities can be taken to secure net gains across each of the different objectives:

- **An Economic Role –** ensuring the provision of land and infrastructure needed to help build a *strong, responsive and competitive economy.*

- **A Social Role –** supplying the required amount of housing while at the same time ensuring and building *strong, vibrant and healthy communities.* Ensuring that the built environment is sited around accessible local services which help support a community's *health, social and cultural well-being.*

- **An Environmental Role –** ensuring development contributes to the protection and enhancement of the *natural, built and historic environment* through the improvement of biodiversity, minimising the use of natural resources and production of pollution / waste, and guaranteeing sufficient adaptation to climate change.

Future Homes Standard 2025 (March 2019)

3.9 Within the Spring Statement 2019, the Chancellor announced the future introduction of the Future Homes Standard 2025. The Standard will mandate the end of fossil fuel heating systems in new homes from 2025, and target "world-leading levels of energy efficiency". In doing this, the Standard aims to utilise green technology to reduce environmental impacts, as well as reducing consumer energy bills.

3.10 This Standard is expected to build on the Prime Minister's Clean Growth Grand Challenge missions, which aims to at least halve the energy usage of new build properties by 2030. It also looks to halve the costs of renovating existing buildings to achieve a similar standard of energy efficiency as new buildings, whilst improving their quality and safety.

Part L:2021 of the Building Regulations

Part L of the Building Regulations relates to the conservation of fuel and power, and applies to both new and existing buildings. The current edition covers the energy efficiency requirements of the building regulations as set out in Part L of Schedule 1 to the Building Regulations. Technical guidance is contained in two Part L Approved Documents.

3.11 The documents of relevance to this scheme include:

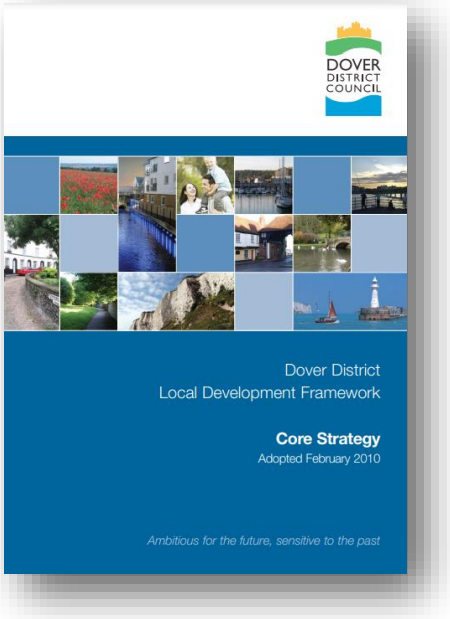
- **Approved Document L Volume 1: Dwellings.** This provides the methodology for new build, domestic buildings to meet current energy efficiency standards, including backstop U-values, carbon dioxide emissions calculations and minimising the risk of overheating. Carbon dioxide emissions reductions are prescribed for 'regulated' emissions only, and relate to heating, hot water, lighting, auxiliary and cooling (where specified). Emissions from domestic appliances (cooking, for example) are considered to be unregulated emissions, and are excluded from the analysis.

Local

3.12 In determining the local context, the following policy documents set out policy relevant to sustainable development:

- Dover District Core Strategy (February 2010); and
- Draft New Dover District Local Plan to 2040 (Regulation 19 Submission; October 2022).

Dover District Core Strategy (February 2010)



3.13 The Core Strategy sets out the overall ambitions and priorities for the District, a set of proposals, and a means for making sure that they are delivered.

3.14 **Policy CP5: Sustainable Construction Standards** states that new residential development permitted after the adoption of the Strategy should meet Code for Sustainable Homes level 3 (or any future national equivalent), at least Code level 4 from 1 April 2013 and at least Code level 5 from 1 April 2016.

Draft New Dover District Local Plan (Regulation 19 Submission; October 2022)

3.15 Although not yet adopted, the emerging Dover District Local Plan demonstrates the importance the local authority places on maintaining and enhancing the natural environment, and therefore represents best practice in terms of the delivery of the principles of sustainable development.

3.16 **SP 1: Planning for Climate Change** states that the Council will seek to ensure that all new built development contributes to the mitigation of, and adaptation to, climate change through:

Mitigation:

- Including low carbon design approaches to reduce energy consumption in buildings;
- Utilising sustainable construction techniques and optimising resource efficiency;

- Incorporating renewable and low carbon technologies;
- Providing opportunities for decentralised energy and heating;
- Maximising green infrastructure; and
- Reducing the need to travel and maximising opportunities for 'smarter' sustainable transport options to deliver the highest possible share of trips by the most sustainable travel modes.

Adaptation:

- Ensuring that development is designed to reduce vulnerability to, and provide resilience from, the impacts arising from a changing climate, whilst not increasing the potential for increased greenhouse gas emissions in doing so;
- Incorporating multi-functional green infrastructure to enhance biodiversity, manage flood risk, address overheating and promote local food production;
- Improving water efficiency; and
- Ensuring that development does not increase flood risk, including by taking a sequential approach to avoid development in flood risk areas, and where possible reduces the risk of flooding.

Applications for qualifying new built development must be supported by a climate change statement.

3.17 **CC1: Reducing Carbon Emissions** states that, in the event that the Future Homes Standard is required to be delivered through the planning system, all new residential dwellings must achieve, as a minimum, a reduction in carbon as required by this Standard. This should be achieved using the measures set out below:

- An increase in fabric standards to deliver a 'fabric first' approach to new development; and
- The use of on-site renewable and low carbon energy technologies.

Until the introduction of the Future Building Standard, all new non-residential buildings must achieve BREEAM ‘Very Good’ standard overall, including Very Good for addressing maximum energy efficiencies under the energy credits.

Development proposals subject to this policy must submit an Energy Statement in the case of residential applications, and a BREEAM pre-assessment for commercial developments as part of a planning application to demonstrate how the policy requirements above have been complied with. Policy requirements will be secured by condition.

3.18 **CC2: Sustainable Design and Construction** states that, in order to mitigate against and adapt to the effects of climate change, all new buildings should:

- Utilise layout, orientation, massing and landscaping to make the best use of solar energy, passive heating and cooling, natural light and natural ventilation;
- Prioritise the use of low embodied carbon and energy efficient building materials and construction techniques;
- Consider the lifecycle of the building and any associated public spaces, including how they can be easily modified to meet changing social and economic needs and how materials can be recycled at the end of their lifetime;
- Provide measures to adapt to climate change, such as the provision of water efficiency measures in accordance with Policy CC4, green infrastructure in accordance with Policies CC8, PM1 and PM3 and Strategic Policies SP2 and SP14, sustainable drainage systems (SuDS) in accordance with Policy CC6, suitable shading of gardens and other open spaces, rainwater harvesting, drought resistant landscaping; and in the case of major developments, the shading of pedestrian routes and the provision of opportunities for growing food; and
- Minimise waste and promote recycling, during both construction and occupation.

All applications for new buildings should be accompanied by a Sustainable Design and Construction Statement demonstrating how the requirements of this Policy have been met.

3.19 **CC4: Water Efficiency** states that all new dwellings must be built to the higher water efficiency standard under Regulation 36(3) of the Building Regulations, to achieve a maximum use of 110 litres per person per day.

The Council will strongly support proposals that seek to reduce daily water consumption even further, through the use of additional measures such as rainwater harvesting.

For non-residential development, development must achieve BREEAM 'Very Good' standard overall, including Very Good for addressing maximum water efficiencies under the mandatory water credits, unless it can be demonstrated that it is not technically feasible and viable.

3.20 **CC5: Flood Risk** states that development on sites at risk of flooding must comply with the National Planning Policy Framework and associated guidance and will only be permitted as an exception and where it is demonstrated by a site-specific Flood Risk Assessment (FRA), carried out in accordance with the requirements set out in the Council's Strategic Flood Risk Assessment, that is would not result in an unacceptable risk of flooding on the site itself or elsewhere.

The FRA should be prepared in accordance with the guidance set out in the Council's 'Site-specific Guidance for Managing Flood Risk'. For development identified by the FRA to be at risk of flooding from any source, flood mitigation should be implemented in accordance with the Flood Risk Management hierarchy outlined in the document 'Site-specific Guidance for Managing Flood Risk'.

Where development does go ahead, all floor levels for living and sleeping accommodation should be set at a minimum of 300mm and 600mm above the flood level for Flood Zones 2 and 3 respectively, including an allowance for climate change.

3.21 **CC6: Surface Water Management** states that all new development should replicate natural ground and surface water flows and decrease surface water run-off through the use of Sustainable Drainage Systems, in accordance with the following criteria and the NPPG:

- Proposals must follow the hierarchy of methods for discharge set out in the Council's Site-specific Guidance for Managing Flood Risk (2019):
    - Into the ground, infiltration the preferred method for discharging surface water run-off
    - To a surface water body, subject to appropriate pollution control measures
    - To a surface water sewer, highway drain or another drainage system
    - To a combined sewer
- SuDS design and robust long-term maintenance must be considered as an integral part of the master-planning and design process, and should where possible provide multi-functional benefits.
- No surface water connection to a foul only sewer will be permitted.
- The discharge of surface water run-off into a public surface or combined sewer will only be acceptable if infiltration or discharge into a surface water body are shown not to be possible, an assessment of the capacity of the sewer has been undertaken, and the evidence demonstrates that there is no increased flood risk.
- In Groundwater Source Protection Zones 1 and 2, SuDS will only be permitted if adequate safeguards against possible contamination are provided or where it can be demonstrated that there will be no environmental risks to water quality and adequate mitigation measures can be implemented.

For major development, the following criteria also apply:

- Drainage must be integrated into on-site multifunctional open space and landscape provision.

- Proposals should be informed by guidance produced by the Lead Local Flood Authority.

- Approval for the design and long-term maintenance of SuDS will be required prior to the development being permitted.

Where SuDS are required, a Sustainable Drainage Strategy containing proportionate information on the proposed sustainable drainage systems must be submitted as part of any planning application.

3.22 **CC8: Tree Planting and Protection** states that:

Tree Planting:

- A minimum of two new trees will be required to be planted for each new dwelling (this does not apply to applications for conversions and changes of use to residential), and a minimum of one new tree will be required to be planted for every 500sqm of new commercial floorspace created.

- Trees should be native Kent species, of local provenance from a bio-secure source, and should be standard size in specification as a minimum.

- A presumption that the trees will be planted on-site rather than off-site will apply. For major development where it is demonstrated that new trees cannot be provided on-site, a financial contribution will be required towards the planting of trees off-site in accordance with the requirements of the Council's Green Infrastructure Strategy.

- A detailed landscaping scheme and landscape management plan should be submitted for all major development schemes, including, but not limited to, details of the trees and shrubs to be planted, and proposals for how the landscaping scheme will be managed and maintained over the lifetime of the development.

Tree Protection and Replacement:

- Dover District Council will make Tree Preservation Orders (TPOs) where necessary in order to protect specific trees, groups of trees, or woodlands, in the interests of amenity and biodiversity.

- Development involving the loss of or damage to a tree, group of trees or areas of woodland that are designated as being of significant amenity, biodiversity or historic value in the Council's Green Infrastructure Strategy will only be permitted when the benefits of the development clearly outweigh the benefits of their retention and the applicant has demonstrated that no alternatives are available.

- Trees protected by Tree Preservation Orders should be retained wherever possible, unless:

    - It is demonstrated by an arboriculturist report that they are dead, dying, diseased, or represent a hazard to public safety; or

- The Council deems the felling to be acceptable with regards to the Council's policy on tree management; or

- The benefit of the proposed development outweighs the benefit of their retention.

- If felling is deemed acceptable by the above, then the planting of two replacement trees for each tree felled in an appropriate location will be required.

Other Considerations

Written Ministerial Statement (Statement UIN HCW488; March 2015)

3.23 On the 25th March 2015, the Secretary of State for the Ministry of Housing Communities and Local Government at the time, provided a planning update, outlining the steps to be taken to streamline the planning system, protect the environment, support economic growth and assist locally-led decision-making. Within this update, it was stated that, for the specific issue of energy performance, local planning authorities will continue to be able to set and apply policies in their Local Plans which require compliance with energy performance standards that exceed the energy requirements of Building Regulations until commencement of amendments to the Planning and Energy Act 2008 in the Deregulation Bill. It was added that the energy performance requirements in the Building Regulations would be set at a level equivalent to the Code for Sustainable Homes Level 4. Whilst the Code for Sustainable Homes is no longer in use, it is still an expectation that local planning authorities take this statement of the Government's intention into account in applying existing policies, and not setting conditions with requirements above a Code Level 4 equivalent. This equates to a 19% reduction in regulation carbon dioxide emissions over the Part L 2013 baseline.

Declaration of a Climate Emergency (July 2019)

3.24 On the 29th January 2020, Dover District Council declared a climate change emergency, and set a target to reduce its carbon emissions to net zero by 2030. Steps that the Council will be taking to achieve this target include the development of a Climate Change Strategy, which explains how the Council intends to meet the net zero target. An Action Plan has also been developed, which aims to refocus the Council's activity, operations and spheres of influence to reduce emissions, increase sustainability and benefit the wider environment. The Action Plan is a living document, and will continue to evolve to reflect ongoing action and opportunities.

4. SUSTAINABILITY STATEMENT

4.1 The Sustainability & Energy Statement for the proposed development is divided into two main parts.

4.2 The sustainability strategy for the proposed development has been assessed in line with the guidance set out within relevant policies of the Dover District Core Strategy and the Draft New Dover District Local Plan to 2040. This enables a holistic sustainability approach to be set out for the proposed development. The Dover District Core Strategy, and the Draft New Dover District Local Plan to 2040, require that all new development provides sustainable, high quality and inclusive design, and this therefore represents best practice guidance to meet high standards of sustainable design and construction.

4.3 The carbon dioxide (CO_2) emissions reduction strategy for the proposed dwellings to be delivered as part of the development is based on the energy hierarchy to provide a rigorous methodology, which maximises cost-effective opportunities for emissions reduction, as detailed in Section 5.

Sustainable Design and Construction

4.4 In line with the guidance provided in the Dover District Core Strategy, and the Draft New Dover District Local Plan to 2040, the sustainability features of the proposed development are outlined below.

4.5 Issues related to energy conservation, renewables and reducing greenhouse gases follow in a dedicated section.

Making Effective Use of Land

4.6 As shown below in Figure 4.1, the site, which is located towards the western edge of the settlement of Lydden, currently comprises agricultural land, with no buildings present on-site.

Figure 4.1 Current site

Approximate site boundary

4.7 The proposed scheme is therefore considered to be an extension of the existing settlement of Lydden, and therefore make effective use of land located within an established residential area.

Location and Transport

4.8 Accessibility to public transport connections contributes to the sustainability of a site's location. As demonstrated within the Transport Statement, prepared by Charles & Associates, Kearsney railway station, which is served by the Southeastern service, is located approximately 3 km to the south-east of the site. The station provides frequent access to London Victoria, Dover Priory, Canterbury East and Chatham. This station is accessible from the site via the number 15 bus service, or within a 12-minute cycle ride.

4.9 The nearest bus stops are located on Canterbury Road, approximately 100 m from the proposed site access. These stops are served by a number of services, including the following:

- Route15, which runs between Canterbury City Centre and Dover Town Centre, with approximately three services per hour Monday – Saturday, and an hourly service on Sundays;
- Route 88/88A, which runs between Sandwich Technology School and Dover, with two services per day (school days only);
- Route 88A/96A, which runs between Eastry and Dover Christ Church Academy, with two services per day (school days only); and
- Route 89B, which runs between Canterbury and Dover Grammar School for Boys, with two services per day (school days only).

4.10 Walking and cycling facilities within the area surrounding the proposed development site are good, providing linkages to a range of local facilities and villages. The proposed development site benefits from a number of existing footpaths, which provide access to local communities such as Alkham and Swingfield, as well as the suburbs of Dover. Notably, footpath ER116 runs along the eastern boundary of the site, and provides access to Canterbury Road to the south of the site. To facilitate walking and cycling within the proposed development, it is intended that internal roads and streets within the scheme will be designed to allow for pedestrians and cyclists to move freely throughout the site, with a footway leading to a raised table feature to be provided as part of the site access and proposed realignment of Church Lane.

4.11 It is intended that car parking be provided in accordance with the requirements of Policy DM13 of the Dover Distroct Core Strategy. Each dwelling will also be provided with cycle storage facilities and an electric vehicle (EV) charging point, to enable future residents to adopt more sustainable modes of transport.

4.12 An assessment of the potential impact of the proposed development on the surrounding highways network has also been undertaken. The results of this assessment indicate that the proposed development would result in approximately 10 additional vehicle trips within each peak hour. As it is considered that these trips would disperse over several routes out of Lydden, it is concluded that the additional road traffic generated by the proposed development would not result in a severe impact on the local highway network.

4.13 Accounting for the above, it is considered that the site benefits from a sustainable located with good access to local amenities and public transport services, and that the development would not result in a significant impact on the local highway network.

Reducing Water Consumption

4.14 The majority of England is under water stress, with more water often being consumed than is available during dry weather. As the population continues to grow, and with changes to the frequency of rainfall events projected as a result of climate change, this situation will be further exacerbated, with even greater pressure exerted on the supply of potable water.

4.15 In order to actively mitigate against this, it is intended that water saving fittings and appliances shall be installed to target a water consumption rate of 105 litres or less per person per day, based on the DCLG water efficiency calculator for the residential elements. This is in compliance with Policy CC4 of the Draft New Dover Local Plan to 2040. Full details of the water calculation are provided in Appendix A2.

4.16 It should be noted that methods such as rainwater harvesting and greywater recycling would not be required to achieve the indoor water usage targets associated with this development. Therefore, the

installation of water butts for irrigation purposes may be a suitable solution if external water storage is required for the dwellings.

4.17 Table 4.1 details the consumption rates associated with the water efficient fittings to be included within the dwellings, subject to changes at later detailed design stages.

Table 4.1 Proposed water use

Fitting	Consumption per use
Low volume dual flush toilets	6 litres (full) / 3 litres (part)
Wash hand basin tap	3 litres per minute
Kitchen sink tap	4 litres per minute
Bath (where fitted)	180 litres capacity (to overflow)
Shower	8 litres per minute
Washing machine	Recommended – 17 litres/kg
Dishwasher	Recommended – 4.5 litres/place setting

Materials and Waste

4.18 Materials should be responsibly sourced by the main contractor, and be specified to have a low embodied impact. Materials with a low embodied impact, as defined within the BRE Green Guide to Specification, should be selected for use in the building design and construction.

4.19 The selection of materials is determined by a variety of factors, such as the architectural context, design rationale, embodied carbon and maintenance requirements. For the proposed development, consideration will be given to the lifecycle environmental performance with materials selected in consideration of the BRE's Green Guide to Specification, aiming for A or B rated materials wherever possible.

4.20 The use of locally sourced materials will be prioritised wherever possible to reduce the impacts associated with the transportation of materials. Using materials produced in the local area will also aid in developing the identity of the development, by ensuring it is in line with the local character and context. For the proposed development, there will be a focus on sustainable design, with materials selected that are in keeping with the local vernacular and landscape character, aiming for locally sourced materials where possible.

4.21 During detailed design of the building fabric, consideration will be given to minimising the environmental impact of materials, by selecting non-toxic and robust materials to ensure longevity and a minimal impact on the health of occupants.

4.22 Timber will be selected and purchased in consideration of sustainability certification. It is intended that all structural timber elements along with any timber used for temporary uses, such as scaffolding, will be sustainably sourced, e.g. from FSC and/or PEFC sources.

4.23 During the construction phase, principal contractor will be required to implement a Site Waste Management Plan (SWMP), which will detail who will be responsible for resource management, which types of waste will be generated, how the waste will be managed (e.g. reduced, reused or recycled), which contractors will be used, and how the quantity of waste generated by the project will be measured.

4.24 To encourage a greater proportion of the operational waste to be diverted from landfill, it is proposed to provide dedicated spaces of sufficient size and convenient location for each of the new dwellings. Internal storage will be considerate of the Building Regulations, Council and other relevant requirements. Dedicated external waste storage areas for refuse and recycling have been allocated for each house.

Nature Conservation and Ecology

4.25 As confirmed within the Ecological Appraisal, prepared by Aspect Ecology, the site itself is not subject to any statutory or non-statutory ecological designations. The nearest statutory designation is the Alkham, Lydden and Swingfield Woods Site of Special Scientific Interest (SSSI), which is located approximately 40m to the south of the site. The Lydden and Temple Ewell Downs SSSI, which is also designated as a Special Area of Conservation (SAC), is located approximately 180m to the north. The closest non-statutory designated site is the Temple Ewell and Lydden Downland Local Wildlife Site (LWS), located approximately 450m to the northeast of the proposed development site. Considering the spatial separation between them, it is considered that the scheme proposed at the development site is unlikely to have a significant adverse effect on the identified ecologically designated sites. Further to this, it is considered that, when accounting for existing open space that is publicly accessible, and subject to contributions to Dover District Council's Thanet Coast Special Protection Area (SPA) Mitigation Strategy and the implementation of appropriate water efficiency measures, the proposed development will not result in significant detrimental impacts on international designated sites.

4.26 The majority of the site is dominated by a single grassland field, with a smaller field at the southwest corner. Hedgerows, tree lines and a wooded strip form the borders of the site. the trees and hedgerows present at the site are considered to be of importance at the local level, and it is intended that the majority of these features will be retained as part of the proposed development. Suitable

mitigation measures, in line with arboriculturalist best practice, will be employed during the construction phase to ensure those hedgerows and trees that are to be retained are provided adequate protection, and new planting will be delivered as part of the proposed development, which will link and strengthen the existing hedgerows. It is noted that no other habitats present within the site are considered to form important ecological features.

4.27 The site is considered to offer limited opportunities for protected species, although it is noted that a low number of Slow-worms were encountered within the site boundaries during surveys undertaken in 2023. It is proposed that a habitat manipulation exercise be undertaken, whereby longer grassland and tall marginal and ruderal vegetation cut to encourage reptiles to disperse to suitable areas of retained habitat. Vegetation should then be cut to the ground level to render the habitats unsuitable for reptiles, and subsequently maintained at a short height. A number of trees with potential to support roosting bats were identified at the site boundaries as part of the survey works, and it is understood that these features are to be retained as part of the proposed development. Features within the boundary hedgerows and treelines considered to offer opportunities for foraging and commuting bats will similarly be retained as part of the proposals. A single off-site badger sett was encountered during survey works, and it is therefore considered that the site may offer some limited opportunities for this species. It is therefore recommended that construction safeguards be implemented during the construction phase, such as the provision of means of escape within trenches left open over night and the blanking off of any open pipes, to ensure there are no adverse impacts on this species during the construction of the proposed development. It is also recommended that an update survey be undertaken prior to the commencement of construction works. The site is also considered to offer some opportunities for other mammals, such as hedgehog, brown hare and Dormouse, and it is therefore recommended that, in addition to retaining and enhancing the hedgerows and tree line boundaries, construction safeguards be implemented during the construction phase. This may include, for example, careful dismantling of rubble piles or areas of strimmed vegetation. Suitable habitat for nesting birds is present within the site, and it is therefore recommended that long-term nesting opportunities be maintained and, where possible, enhanced as part of the proposed development. This may be achieved through new landscape planting, and the integration of nest boxes. Appropriate mitigation measures, such as ensuring construction works that have the potential to adversely impact on nesting opportunities be undertaken outside of the nesting bird season (March to August, inclusive), will be implemented to safeguard protected species during site clearance works.

4.28 The following ecological enhancements are recommended for incorporated within the proposed development in order to deliver a net gain in biodiversity:

- **New Planting.** It is recommended that, where practicable, new planting within the site will comprise native species of local provenance. Where non-native species are proposed, they

should be of value to wildlife, such as varieties listed on the Royal Horticultural Society's 'Plants for Pollinators' database, providing a nectar source for bees and other pollinating insects.

- **Wildflower Grassland.** It is recommended that areas of wildflower grassland be created within the site to provide opportunities for biodiversity. Where feasible, areas of grassland should comprise locally appropriate spaces, and the use of wildflower turfs should be considered to facilitate the rapid establishment of these habitats.

- **Wetland Features.** There is potential to create new wetland habitats as part of the proposed development, that would provide a range of opportunities for wildlife. It is recommended that ponds or other wetland habitats, such as sustainable urban drainage systems (SuDS), are given consideration for inclusion. The delivery of these features would both provide opportunities to wildlife, and contribute to the sustainable management of surface water runoff.

- **Bat Boxes.** It is recommended that a number of bat boxes be incorporated, primarily situated on retained trees, and placed as high as possible in sheltered, wind-free areas that are exposed to the sun for part of the day. Where architectural design allows, integrated bat boxes and/or roost features should be incorporated within a portion of the proposed dwellings.

- **Bird Boxes.** A number of bird nesting boxes are to be incorporated within the proposed development, thereby increasing nesting opportunities for birds at the site. Ideally, the bird boxes will have greater potential for use if sited on suitable, retained trees, situated as high up as possible. In addition, where architectural design allows, a number of integrated bird boxes and/or nesting features should be incorporated into a proportion of the new build.

- **Habitat Piles.** A proportion of any deadwood arising from vegetation clearance works should be retained within the site in a number of wood piles located within areas of new planting, new wetland habitats or areas of wildflower grassland in order to provide potential habitat opportunities for reptile species.

4.29 The proposed Landscape Strategy Plan, prepared by Aspect Landscape Planning Ltd, is shown in Figure 4.2 below.

Figure 4.2 Proposed Illustrative Landscape Masterplan

Reducing Flood Risk and Surface Water Run-off

4.30 Information contained within the Flood Risk Assessment, prepared by GTA Civils Ltd, confirms that the entire majority of the site falls within Flood Zone 1. This indicates that the site is at low risk of fluvial or tidal flooding, with a less than 1 in 1,000 annual probability of river or sea flooding.

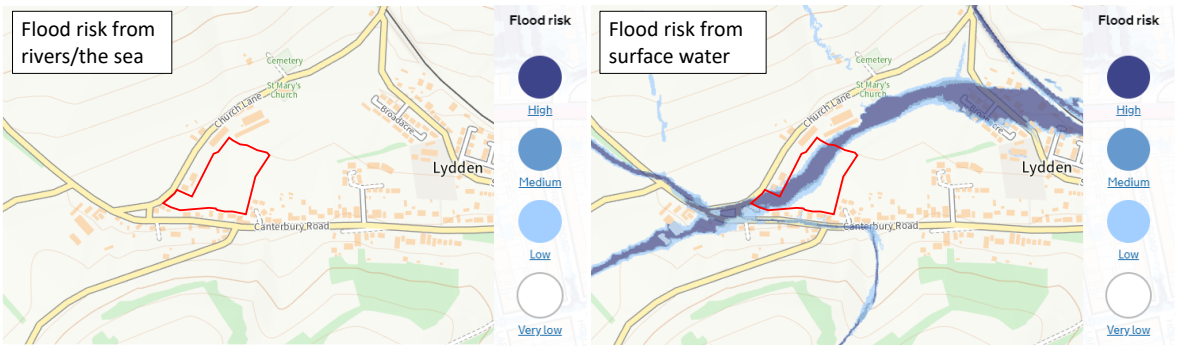
4.31 Figure 4.3 indicates that, whilst the majority of the eastern side of the site is at very low risk of surface water flooding, the western portion of the site is demonstrated to be at low to high risk of flooding from surface water sources. The Flood Risk Assessment notes that an overland flow route bisects the site along its channel, and that this is liable to flood to a depth of between 300mm and 900mm. as part of the proposed development, it is intended that the residential dwellings be set above the estimated maximum flood depths present at the site during a 1 in 1,000 year flood event, with a minimum 300mm freeboard allowance to be made. Furthermore, a new access is to be delivered that will allow for the levels within the eastern section of the site to be raised. This will effectively re-route the existing dry valley within the western section of the site further west from its current path, therefore reducing the risk of flooding to the proposed residential dwellings.

4.32 It is confirmed within the Flood Risk Assessment that the site is not at risk of flooding from artificial sources, and that there are no docks or canals present within the surrounding area. Historical data for the site indicates that there are no records of flooding having occurred within the proposed site boundaries. It is also noted that, whilst the site is shown to overlay Medium – High and High

Groundwater Vulnerability zones, there are no records of groundwater flooding having occurred within the site.

Figure 4.3 Extract from the Environment Agency's online flood map

Approximate site boundary



4.33 A proposed surface water drainage strategy for the scheme is also presented within the Flood Risk Assessment. At this stage, it is expected that the underlying geology at the site will facilitate the use of infiltration techniques, and it is therefore intended that surface water runoff generated on the site be routed to three deep bore soakaways. It is also intended that private driveways be line with lined permeable paving, and that attenuation tanks be delivered upstream of each of the three deep bore soakaways, with the capacity to hold surface water runoff generated during the 1 in 100 year event, plus 45% climate change allowance. Runoff generated by the roads to be included within the scheme will be routed into the deep bore soakaways, with sufficient water treatment to be delivered through the employment of deep pot gullies or smart sponges.

4.34 The Flood Risk Assessment concludes that the development will not increase the risk of flooding either on the site, nor within the surrounding area. This is therefore in compliance with the NPPF and the current Planning Policy Guidance.

Pollution

4.35 To assess the impact of the development in terms of air, noise, light and water pollution, a number of assessments have been undertaken. The results of these assessments are summarised below.

Air Quality

4.36 An Air Quality Assessment, addressing both the construction and operational impacts of the proposed development, has been undertaken by Entran. This Assessment concludes that, whilst limited releases of dust and particulate matter are likely to be generated during the demolition and construction phases of the proposed development, the employment of good site practices and suitable mitigation measures will ensure that the release of dust and particulate matter may be effectively mitigated. The application of the recommended mitigation measures, which include the development of a Dust Management Plan (DMP), will ensure that the impacts arising during the demolition and construction phases of the proposed scheme on local air quality will be negligible.

4.37 Modelling undertaken as part of the Air Quality Assessment demonstrates that concentrations of pollutants, including NO_2, PM_{10} and $PM_{2.5}$, are below the relevant air quality objectives within the proposed development site and at nearby sensitive receptors. Future occupants would therefore not be exposed to pollutant concentrations above the relevant objective levels, therefore the impact of the proposed development with regards new exposure to air quality is considered to be negligible

Noise Pollution

4.38 A Residential Noise Assessment has been undertaken by Entran to consider the projected noise levels within the habitable spaces of the proposed dwellings.

4.39 Modelling undertaken as part of the Environmental Noise Assessment indicates that all the proposed dwellings across the development will achieve the recommended levels of internal noise with windows partially open, without the need for additional mitigation. Typical insulated double glazing and attenuated trickle ventilation are considered to be suitable to attain suitable internal noise levels. Ambient noise levels within the external amenity spaces are also expected to achieve the recommendations of the relevant industry standards, and therefore no specific mitigation is required.

Light Pollution

4.40 As outlined in the Ecological Appraisal, prepared by Aspect Ecology, a sensitive lighting strategy should be employed across the development to mitigate potential impacts on bats, invertebrates and other nocturnal fauna. Recommended measures include: the integration of light exclusion zones, particularly where habitat areas are to be retained and at the margins of the site; positioning of new planting or built elements to provide light barriers or screening; lighting with low lux (intensity) levels; directional lighting to provide light only to areas within which it is required; spacing of lighting units to minimise the overall areas that are artificially lit; and dimming and part-night lighting.

Water

4.41 The implementation of the proposed sustainable drainage system (SuDS), outlined with the Flood Risk Assessment prepared by GTA Civils Ltd, will include appropriate pollution control to minimise the risk of pollution entering the ground from surface water runoff from the development, in compliance with Environment Agency's (EA) Pollution Prevention Guidance. An appropriate SuDS treatment train, consisting of a range of features, including deep pot gullies or smart sponges, have been incorporated within the design to treat surface water runoff before it discharges directly into the ground.

4.42 It is recommended that additional measures are also adopted during construction to minimise the risk of ground and surface water pollution, including:

- Oil separators;

- Clear marking and signage of drainage stems;
- Full bunding of on-site fuel or oil delivery areas;
- Bunding of areas to be used for cleaning activities; and
- Best practice measures, implemented as part of a Construction Environmental Management Plan (CEMP), to mitigate the impacts of construction-related dust and emissions.

5. ENERGY STRATEGY

5.1 With reference to the policy requirements, guidance and industry best practice detailed in Section 3, a comprehensive energy and carbon dioxide (CO_2) emissions assessment has been carried out for the proposed development. The energy performance of the scheme has been analysed and evaluated against the most up-to-date iteration of Part L of the Building Regulations and pertinent Dover District Council policies, accounting for economic, technical and functional feasibility.

5.2 It should be noted that, due to the outline nature of the application, there are no detailed designs currently available for the proposed dwellings. Therefore, in order to maintain a degree of flexibility in complying with and exceeding the national standards set out in the Building Regulations on carbon and energy performance, as required by Dover District Council, the measures outlined below describe a potential means of achieving this. Therefore, the final dwelling specifications may be subject to change during subsequent design, with additional detail to be provided as part of a Reserved Matters application.

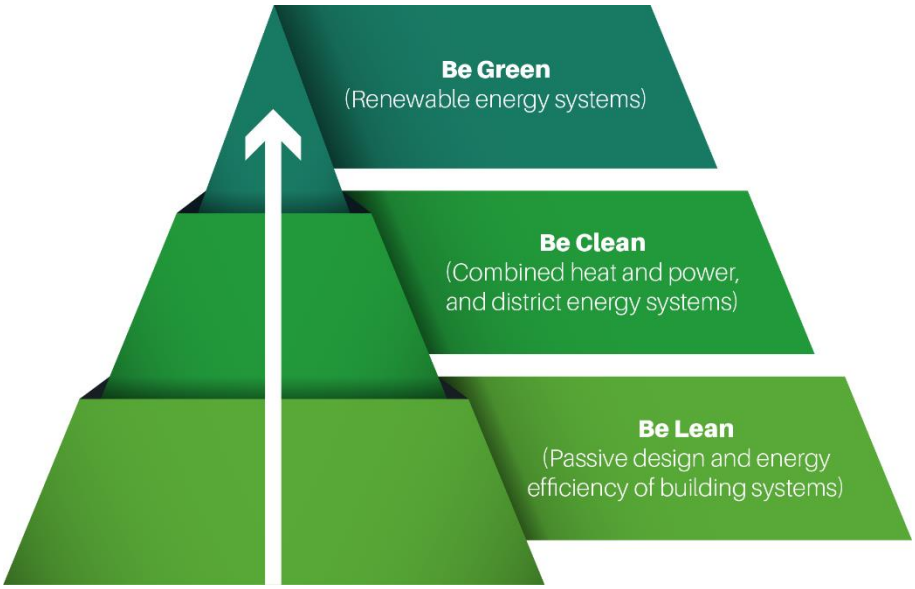
The Energy Hierarchy

5.3 The proposed energy strategy is based upon the principles of the Energy Hierarchy on the basis that it is preferable to reduce carbon dioxide emissions through reduced energy consumption above decarbonisation through alternative energy sources.

5.4 The tiers of the Energy Hierarchy are:

- Be Lean Use less energy
- Be Clean Supply energy efficiently
- Be Green Use renewable energy

Figure 5.1 The Energy Hierarchy



'Be Lean' (Use Less Energy)

5.5 Within the first stage of the energy hierarchy, it is proposed to incorporate high levels of passive and energy efficient design measures in order to reduce the development's energy consumption and associated CO_2 emissions, utilising a 'fabric first' approach to reduce energy demand.

5.6 Details of the passive design and indicative energy efficiency measures proposed have been detailed below.

5.7 Passive design utilises daylight, solar energy, shading and stack or wind driven ventilation to illuminate, heat, shade where necessary and ventilate/cool the building, thus requiring less (mechanical) energy to achieve the performance standards for health and wellbeing of the residents.

5.8 Site characteristics relating to local climate, surroundings, scale and size of the development therefore passively influence the potential energy requirement and savings that can be achieved through the consideration of these aspects. The parameters that most influence the potential to utilise sunlight and solar gains are the orientation and layout of buildings, however these are typically driven by various factors other than energy efficiency or bioclimatic design considerations (e.g. aesthetics, function, etc.).

5.9 The orientation of the dwellings will be dictated by the plot orientation in order to give the overall scheme a cohesive design approach. The distances between buildings will be optimised to ensure sufficient access to natural daylight and passive solar gains to the dwellings. Light and solar gain will also be influenced by the fenestration and the selection of glazing with a high degree of light transmittance.

5.10 The following U-values are proposed as an indicative guide for the building elements and will be further evaluated during detailed design, to best minimise heat loss or gain, depending on the time of year. The table demonstrates the compliant performance of the building fabric with the Building Regulations requirements for domestic uses.

Table 5.1 Proposed building fabric U-values

Building Fabric Element	Part L1:2021 backstop U-values (W/m²K)	Proposed U-values (W/m²K)
Ground floor	0.18	0.10
External wall	0.26	0.15
Roof	0.16	0.10
Windows	1.60 (including frame)	1.40 (including frame)
Doors	1.60	1.00

5.11 It is proposed that glazing will be double glazed, argon filled with a low emissivity coating. Although this has yet to be formally specified, it is expected that window U-values will be 1.4 W/m^{2}K or better (including frame), with a g-value of 0.63 and light transmission of ~70% to improve natural daylight penetration.

5.12 A high level of air tightness is proposed, where a level equal to or below 5 m^3/h/m^2 shall be targeted, meaning that air infiltration between the internal and the external environment will be largely controlled, and space heating/cooling demand further reduced.

5.13 The other significant means of heat loss from dwellings is due to thermal (or cold) bridging. This is typically a construction detail which has higher thermal conductivity than the surrounding materials, creating a path of least resistance for heat transfer. Thermal bridges result in an overall reduction in thermal resistance of the building elements and should be designed out where possible to minimise unwanted heat loss. In order to minimise heat loss through thermal bridges it is intended that an equivalent y-value of 0.05 will be targeted for each dwelling.

5.14 High efficiency plant, equipment and controls are proposed to limit the energy consumed in order to provide the required level of indoor environmental performance and control. Performance efficiency values have been specified in line with the requirements of the Building Regulations in order to minimise carbon dioxide emissions as far as possible through the 'Be Lean' stage.

- Low energy LED lighting will be installed throughout the residential units.
- In order to remove the need for fossil fuel combustion on-site, it is intended that space and water heating will be provided by air source heat pump (ASHP) systems. This is addressed in more detail in the renewable energy technology section below.
- Whilst residential units will be provided with opening windows to mitigate against overheating and to provide fresh air, the incorporation of mechanical ventilation with heat recovery (MVHR) also be provided, with heat exchanger efficiency of up to 95%, may also be considered. This efficiency is higher than that set out in the Building Regulations. It is also recommended that, should MVHR systems be specified, that these will include a summer bypass mode to reduce the risk of overheating in the summer.
- Energy management systems, such as smart meters, will be installed in all dwellings to enable future residents to monitor their energy usage, and therefore aid in reducing their energy consumption.
- All future residents will be provided with a Home User Guide, to ensure all plant and equipment provided is used correctly and to enable efficiency of use to be maximised.
- Time and temperature zones will be employed in all dwellings and will be controlled by the suitable arrangement of plumbing and electrical systems.

'Be Clean' (Supply Energy Efficiently)

5.15 The potential for the proposed development to incorporate a low carbon heating system has been reviewed for the scheme.

5.16 Local heat and power sources minimise distribution losses and achieve greater efficiencies when compared to a separate energy system. This in turn reduces the site-wide energy consumption and associated carbon dioxide emissions.

5.17 The potential integration of a district heating network or a conventional gas-fired combined heat and power (CHP) plant to provide low carbon heat and power on-site has been evaluated for the development, in compliance with industry best practice and appropriate planning policies.

District Heating Feasibility

5.18 The feasibility of a district heating network is heavily dependent on a location's heat demand. In turn, heat demand in the locality is dependent on building usage and the surrounding area heat demand density.

5.19 Figure 5.2 below displays the development site within its proposed surroundings. From this, it can be concluded that the site itself is undeveloped, with a low-density settlement to the east. The surrounding area is therefore likely to be characterised by a low heat demand.

5.20 There are no existing or proposed district heating networks within close proximity to the development site. In addition, due to the relatively low density of the development, and the cost of the infrastructure required to connect a rural location to a district heat network, it is not deemed cost effective to establish a district heat network on the site.

Figure 5.2 Site and surroundings

Approximate site boundary

5.21 Based on the anticipated timescale of the proposed development and the predicted trajectory of the national electricity grid decarbonisation, the development of a combined heat and power (CHP) network powered by fossil fuels is not considered to be the most carbon efficient approach.

5.22 The incorporation of a gas-fired CHP network will lock the development into relatively carbon intensive gas-fired heating and hot water technology, and will not facilitate the transition to less carbon intensive solutions.

5.23 Based on this, it is recommended that air source heat pump (ASHP) systems and rooftop photovoltaic (PV) panels will be employed to service the development. The incorporation of these technologies is discussed in greater detail in the 'Be Green' section below.

‘Be Green’ (Utilise Renewable Technologies)

5.24 The proposed development has given consideration to renewable energy technologies that may be applicable to deliver the required level of carbon dioxide savings over the Part L:2013 baseline, and the likely local effects on the environment.

5.25 In determining the appropriate renewable technology for the site, a number of factors including carbon dioxide savings, site constraints, and potential visual impacts have been considered. Further details of each technology and its associated assessment in relation to the development are provided below.

- **Biomass –** This technology is not considered a practical solution for reducing carbon dioxide emissions, in the view of limited options available for domestic scale installations, storage space requirements for the combustible material, and the transport related carbon emissions which are not normally accounted for within energy modelling. Furthermore, high nitrous oxide (NOx) and particulate matter (PMx) emissions are associated with the use of biomass fuel, and as the proposed development will form part of a wider urban settlement, permitted emissions will be restricted.

- **Air Source Heat Pumps (ASHP) –** Given the site location and the lack of local existing or proposed heat networks, it is proposed that, where practicable and technically feasible, air source heat pump (ASHP) technology will be incorporated for all the proposed dwellings. It is proposed that highly efficient, individual ASHP systems are installed to serve both the space and water heating demands of the proposed dwellings. It is recommended that the systems specified have a minimum heating coefficient of 4.35, and a hot water coefficient of performance of 2.95. As the design progresses, it is recommended that acoustic measures to limit the noise generated by the outside unit of the system during operation are considered.

- **Ground Source Heat Pumps (GSHP) –** This technology is considered unlikely to be suitable, due to the uncertainties concerning the thermal properties of the ground. Ground investigation and borehole drilling is likely to be cost prohibitive and may not yield a suitable energy source. In addition to this, the carbon dioxide and energy cost savings arising from the use of this technology are unlikely to be significant when compared to that of the air source heat pump systems proposed for the development, particularly as high-grade heat is required to generate domestic hot water. The use of ground source heat pumps for the proposed development is therefore not considered viable.

- **Photovoltaics (PV) –** This technology is considered to be appropriate for the proposed scheme, in light of proposed layout that can deliver dwellings with areas of unobstructed south-east to south-west facing roof space. This technology may therefore be employed to generate renewable energy on-site, with the potential excess power to be exported to the grid or harnessed using battery storage. The use of this technology, which typically has minimal maintenance requirements, should therefore be considered during the detailed design stage to contribute to

the proposed development's compliance with and exceedance of Part L:2021 of the Building Regulations. As such, it is intended that, where practicable and technically feasible, all dwellings will be provided with photovoltaic panels, with the quantum of PV technology to be provided confirmed as part of a Reserved Matters Application.

- **Solar Thermal Hot Water (STHW) –** This technology is presently rejected as domestic hot water is proposed to be provided by highly efficient individual air source heat pump systems. Furthermore, the STHW panels would compete for roof space with the PV panels that are to be employed. In addition to this, hot water demand is considered to be outside the energy generating period for the solar thermal panels, meaning its ability to significantly reduce carbon emissions during operation is limited.

- **Wind Turbines –** This technology is rejected on the basis of its potential impact on visual amenity and relatively low efficiency from unpredictable, turbulent wind conditions associated with low-lying locations.

6. SUMMARY

6.1 This Sustainability & Energy Statement provides an overview as to how the proposed development of the Land east of Church Lane, Lydden contributes to sustainable development in the context of the strategic, design and construction considerations.

6.2 Consideration has been given to the Dover District Council Core Strategy (February 2010) and the draft Dover District Local Plan to 2040 (Regulation 19 Submission; October 2022) in the formulation of this statement. The overall development has been assessed using the guidance outlined in Core Strategy policy CP 5 (Sustainable Construction Standards) and the draft Local Plan policies SP1 (Planning for Climate Change), CC1 (Reducing Carbon Emissions), CC2 (Sustainable Design and Construction), CC4 (Water Efficiency), CC5 (Flood Risk), CC6 (Surface Water Management) and CC8 (Tree Planting and Protection) providing a holistic sustainability approach for the proposals.

6.3 By designing to rigorous energy standards, employing electric-only systems, and integrating renewable energy technologies, the application will respond directly to the Climate Emergency declared by the Council in July 2019. These measures combine to provide a significant carbon dioxide emissions saving compared to the Part L:2021 baseline, aiming to significantly exceed the requirements of Dover District Council.

6.4 Sections 4 and 5 of this statement demonstrate that the siting and design of the proposals support relevant policies relating to sustainable development. This shows that the proposed development will:

- make efficient use of land;
- incorporate low-impact materials, according to the BRE Green Guide to Specification;
- minimise internal water consumption to 105 litres per person per day;
- incorporate measures to improve site biodiversity, including biodiverse planting;
- ensure air, noise, light and water pollution are minimised as far as possible;
- minimise waste production during construction and maximise the proportion of waste to be diverted from landfill;
- minimise energy demand through the specification of low U-values, low air permeability and low thermal bridging to reduce heat loss;
- be fossil fuel free, utilising electric-only systems, such as air source heat pumps (ASHPs) to serve the space and water heating demands of the proposed dwellings;

- utilise renewable technology, such as rooftop photovoltaic (PV) panels, to provide renewable electricity; and

- achieve a significant reduction in CO_2 emissions for the proposed dwellings, following the Energy Hierarchy methodology.

6.5 Overall, the proposals for the scheme are in line with the principles of sustainable development as well as the policy requirements of the NPPF and the Dover District Council, and will provide a development that promotes these principles in operation.

A1. SITE PLAN

Quinn Estates

Proposed Residential Development, Land at Church Lane, Lydden

N

NOTES:

Do Not Scale.

Report all discrepancies, errors and omissions.

Verify all dimensions on site before commencing any work on site or preparing shop drawings.

All materials, components and workmanship are to comply with the relevant British Standards, Codes of Practice, and appropriate manufacturers recommendations that from time to time shall apply.

For all specialist work, see relevant drawings.

Rev	Date	Description
R	07.07.2023	Water constraints added
S	11.07.2023	Highways access amended
T	24.07.2023	Parking amended
U	26.07.2023	Highways Comments
V	31.07.2023	Highways additional data
W	01.08.2023	Landscape Updated

Key

- Site Boundary
- Flood Extent Line
- Proposed Trees
- Existing Trees
- Private Housing
- Affordable Housing

Project Title

Proposed Residential Development
Land at Church Lane
Lydden
CT15 7JP

Drawing Description

Sketch Scheme
Colored

Scale	Drawn by
1:500@A1	AS
Date	Checked by
August 2023	CSS

CLAGUE ARCHITECTS

62 Burgate, Canterbury
Kent CT1 2BH 01227 762060

1 Kinsbourne Court, Luton Road,
Harpenden, Hertfordshire AL5 3BL 01582 765102

8, Disney Street
London SE1 1JF 0203 597 6112

CANTERBURY LONDON HARPENDEN

Drawing Number	Revision
23371A / 105	W

A2. WATER USAGE CALCULATOR

breglobal

Job no:	23-IF028
Date:	03/08/2023
Assessor name:	
Registration no:	N/A
Development name:	Land at Church Lane, Lydden

PRINTING: before printing please make sure that in "Page Setup" you have selected the page to be as "Landscape" and that the Scale has been set up to 70% (maximum)

WATER EFFICIENCY CALCULATOR FOR NEW DWELLINGS - (BASIC CALCULATOR)

		House Type:	Type 1		Type 2		Type 3		Type 4		Type 5		Type 6		Type 7		Type 8		Type 9		Type 10	
		Description:	Typical Unit																			
Installation Type	Unit of measure		Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day
Is a dual or single flush WC specified?			Dual		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Click to Select		Click to Select		Click to Select	
WC	Full flush volume		6	8.76		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
	Part flush volume		3	8.88		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Taps (excluding kitchen and external taps)	Flow rate (litres / minute)		3	6.32		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Are both a Bath & Shower Present?			Bath & Shower		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:	
Bath	Capacity to overflow		180	19.80		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Shower	Flow rate (litres / minute)		8	34.96		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Kitchen sink taps	Flow rate (litres / minute)		4	12.12		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Has a washing machine been specified?			No		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:	
Washing Machine	Litres / kg			17.16		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Has a dishwasher been specified?			No		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:	
Dishwasher	Litres / place setting			4.50		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Has a waste disposal unit been specified?			No	0.00	Select option:	0.00	Select option:	0.00	Select option:	0.00	Select option:	0.00	Select option:	0.00	Select option:	0.00	Select option:	0.00	Select option:	0.00	Select option:	0.00
Water Softener	Litres / person / day			0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
	Calculated Use			112.5		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
	Normalisation factor			0.91		0.91		0.91		0.91		0.91		0.91		0.91		0.91		0.91		0.91
Code for Sustainable Homes	Total Consumption			102.4		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
	Mandatory level			Level 3/4		-		-		-		-		-		-		-		-		-
Building Regulations 17.K	External use			5.0		5.0		5.0		5.0		5.0		5.0		5.0		5.0		5.0		5.0
	Total Consumption			107.4		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
	17.K Compliance?			Yes		-		-		-		-		-		-		-		-		-

A3. GENERAL NOTES

A3.1 The report is based on information available at the time of the writing and discussions with the client during any project meetings. Where any data supplied by the client or from other sources have been used it has been assumed that the information is correct. No responsibility can be accepted by Iceni Projects Ltd for inaccuracies in the data supplied by any other party.

A3.2 The review of planning policy and other requirements does not constitute a detailed review. Its purpose is as a guide to provide the context for the development and to determine the likely requirements of the Local Authority.

A3.3 No site visits have been carried out, unless otherwise specified.

A3.4 This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in guidance may necessitate a re-interpretation of the report in whole or in part after its original submission.

A3.5 The copyright in the written materials shall remain the property of Iceni Projects Ltd but with a royalty-free perpetual licence to the client deemed to be granted on payment in full to Iceni Projects Ltd by the client of the outstanding amounts.

A3.6 The report is provided for sole use by the client and is confidential to them and their professional advisors. No responsibility whatsoever for the contents of the report will be accepted to any person other than the client, unless otherwise agreed.

A3.7 These terms apply in addition to the Iceni Projects Ltd "Standard Terms of Business" (or in addition to another written contract which may be in place instead thereof) unless specifically agreed in writing. (In the event of a conflict between these terms and the said Standard Terms of Business the said Standard Terms of Business shall prevail.). In the absence of such a written contract the Standard Terms of Business will apply.