



Sustainability Statement

Land to North of Cornells Lane, Widdington, Essex

Mr And Mrs M. Tee

Report No: SS-ES-MT-WN-21-01

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1. ASSESSMENT INFORMATION

Project Name	Widdington
Project Address	Land to North of Cornells Lane, Widdington, Essex
Developers	Mr and Mrs M. Tee
Developer Address	TBC
Architect	The Clarke Smith Partnership
Architect's Address	Unit 1, Chuck A Bush, Farm Barn, Royston Road, Whittlesford, Cambridge, CB22 4NW
Project Description	Erection of 4 no. detached dwellings and associated works.

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01	MH	25/06/21	Initial Issue
02			
03			

This document has been prepared for Mr and Mrs M. Tee only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein

2. EXECUTIVE SUMMARY

The following report has been prepared by Abbey Consultants (Southern) Ltd, a specialist environmental and energy consultancy on behalf of Mr and Mrs M. Tee.

The proposed development is for the erection of 4 no. detached dwellings and associated works. The development site is located immediately north of Cornells Lane in the village of Widdington, which is located within the district of Uttlesford.

Sustainability is at the heart of the proposed application and has been considered from the outset.

The proposed strategy has been based around the objectives of the Uttlesford District Council's Local Plan (2005) and the Interim Climate Change Planning Policy (2021) documents.

Resource and water efficiency have been maximised, whilst the production of waste and pollution is to be kept to a minimum, ensuring the impact of the proposals on its surroundings and the environment is reduced.

By designing to rigorous energy standards and ensuring the dwellings are capable of adopting future technology, the application will respond directly to the Uttlesford District Council's policies as it targets to significantly reduce carbon dioxide emissions over the Building Regulations 2013 Part L requirements.

The proposed residential units will be designed to reduce their CO₂ emissions by 60.95% below the Building Regulations 2013 (TER) minimum requirements. This equates to a **saving of 5.11 tonnes of CO₂ per year** and will be achieved with the use of a highly efficient building fabric, individual ASHPs and the installation of 7.5 kWp of photovoltaic cells (PV).

Crucially, these measures will also make sure the proposed development is future proofed and capable of adapting to the move towards a low carbon economy.

Figure 1: Site Plan



The proposed residential development will meet a local housing need in the area by providing a distinct and highly sought-after residential development as well as supporting the local economy.

Every dwelling will be provided with water conservation measures to make efficient use of potable water to meet everyday needs. A specification has been detailed within the Water Conservation section which will ensure that internal water consumption within the dwellings will be limited to 110 litres per person per day. This is in line with Interim Policy 3 of Uttlesford District Council's Interim Climate Change Planning Policy (2021) document.

The site is not at risk of flooding (Environment Agency Zone 1). Permeable surfaces for sustainable drainage are proposed to the private drive and individual plot turning areas.

The use of recycled, responsibly sourced and sustainably manufactured building materials for the main building elements ensures materials are sourced locally wherever practicable and that most of the key construction materials have been specified to have a low environmental impact throughout their life-cycle.

The site will be constructed with minimal waste production, making efficient use of materials; waste that is generated during the construction process will be subject to strict waste management procedures, with high levels of recycling. Every unit is provided with internal waste recycling facilities to encourage and enable all residents to recycle their municipal waste. The 5 step waste hierarchy will be followed:

- Eliminate Waste
- Reuse waste materials
- Recycle/compost waste materials
- Recover energy
- Disposal to landfill

The landscaping strategy provides a harmonious integration with local ecological features as well as protecting habitats for existing wildlife through the planting of native species of trees and shrubs. It will include:

- Mixed hedgerow to all boundaries;
- Hedge planting to include Hawthorn, Hazel, Blackthorn, Dog Rose, Crab Apple, Field Maple and Dogwood;
- Bird nesting boxes and bat boxes throughout the site;
- A number of hedgehog highways will be installed to fences/hedgerows;
- Selection of fruit trees within garden areas;
- Selection of plants that rely on limited water for establishment;
- Selection of local plant materials to minimise transport footprint;

A new 0.29 acre ecological area will be provided to the north of the site. This area is to be planted with trees and wild flowers within the grassland. An ecology pond with a bog area will also be created for wildlife. The pond will provide a 'beach' area for access for wild birds and other animals. The new ecological area will increase wildlife to the locality by increasing habitat.

A new pedestrian footpath will also be provided along the southern edge of this site. This will give pedestrian access from Cornells Lane into the village.

3. PLANNING POLICY

An effective planning system is required to contribute to achieving sustainable development.

Sustainable development is defined as having the following three overarching objectives which are interdependent and need to be pursued in mutually supportive ways: an economic objective, a social objective, and an environmental objective.

1. Economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
2. Social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
3. Environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

3.1 NATIONAL PLANNING POLICY FRAMEWORK (NPPF) 2019

The NPPF sets out the Government's planning policies for England and how these are expected to be applied. It sets out the Government's requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

Chapter 14 Meeting the challenge of climate change, flooding and coastal change

The following paragraphs set out the Government's position in response to reducing carbon emissions:

Paragraph 150: New development should be planned for in ways that:

- a. avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and
- b. can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

Paragraph 151. To help increase the use and supply of renewable and low carbon energy and heat, plans should:

- a. provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);
- b. consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
- c. identify opportunities for development to draw its energy supply from decentralised, renewable, or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

Paragraph 153: In determining planning applications, local planning authorities should expect new development to:

- a. comply with adopted Local Plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
- b. take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

Paragraph 154: When determining planning applications for renewable and low carbon development, local planning authorities should:

- a. not require applicants to demonstrate the overall need for renewable or low carbon energy and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.

3.2 LOCAL POLICY

Uttlesford District Council

Interim Climate Change Planning Policy

February 2021

To bridge the gap between the Council's adopted 2005 local plan and the new one, an Interim Climate Change Planning Policy document has been produced on a non-statutory basis. The main purpose of the document is to reiterate to developers that Uttlesford District Council is resolute about climate change mitigation and adaptation measures. The Council expects to see this taken on board, when building new developments. It should also help officers in their negotiations to bring forward more climate friendly proposals.

It should be noted that the document states that the Council fully recognises that the interim policy will need to be applied proportionately in each case – the scope for mitigation and adaptation measures will be greater in larger schemes – and that there may be options that the guidance does not consider.

The interim policies are as follows:

Interim Policy 1:

Developers should demonstrate the path that their proposals take towards achieving net-zero carbon by 2030, and all the ways their proposals are working towards this in response to planning law, and also to the guidance set out in the NPPF and Planning Policy Guidance. This should include:

- i. Locating the development where the associated climate change impacts and carbon emissions, including those derived from transport associated with the intended use of the development can be minimised, and
- ii. Promoting development which minimises carbon emissions and greenhouse gas emissions and maximises the use of renewable or low carbon energy generation.

Interim Policy 2:

Developers should demonstrate how site surroundings and heritage have influenced their choices over climate change mitigation and adaptation proposals.

Interim Policy 3:

Development should be designed to minimise consumption of water, and should make adequate and appropriate provision for water recycling. Development should also protect and enhance local water quality including measures to support improvement to a water body's Water Framework Directive status. A condition on all planning permissions for the erection of new residential development will be imposed to trigger the optional requirement under Part G of the Building Regulations for the maximum potential consumption of wholesome water of 110 litres per person per day.

Interim Policy 4:

Development should be designed to provide adequate mitigation against flood risk and to embed suitable water recycling, waste water and waste management so as not to cause contamination of groundwater, particularly in recognised protection zones, of surface water or run-off to river catchments. Where there is the potential for contamination, effective safeguards should be put in place to prevent any deterioration in current standards. A maintenance plan will be required detailing who will be responsible for maintenance of SuDS and how they will be maintained. This to ensure that SuDS are maintained for the lifetime of the development.

Interim Policy 5:

Developers should demonstrate how their proposals would not lead to any material decrease in air quality or to significant adverse effects on the environment or amenity and, where relevant, how they would comply with the Saffron Walden Air Quality Action Plan to minimise effects on local air quality and reduce CO₂ emissions.

Interim Policy 6:

Developers should demonstrate how their proposals prioritise the natural environment and how through the design, planning and delivery would result in a biodiversity net gain and enhances multifunctionality and multiple benefits for people, wildlife and habitats.

Interim Policy 7:

Developers should demonstrate how the level of tree and/or hedgerow planting that has been proposed is sufficient to i) contribute towards reducing the impact of the proposals on the environment, and ii) improve living conditions for residents, workers and those using any public areas.

Interim Policy 8:

Developers should demonstrate to what extent density and the mix of their developments contribute towards climate change mitigation and adaptation.

Interim Policy 9:

Developers should demonstrate what opportunities have been taken at a neighbourhood level to design-in renewable energy infrastructure and community energy schemes for renewable energy as an integral part of the development, how they have been incorporated, or why they have been rejected.

Interim Policy 10:

Developers should demonstrate how the sustainability of their proposals has been enhanced by landform and the selected landscape network.

Interim Policy 11:

Developers should demonstrate how future proofing at the layout level has been catered for in their developments.

Interim Policy 12:

Developers should demonstrate how green and intelligent design and green infrastructure have contributed to the sustainability of their proposals by reference to the themes in Paragraph 5.1, the general recommendations set out in Paragraph 5.3 and the energy hierarchy in Paragraph 5.37.

Paragraph 5.1

This section covers materials used in individual buildings and associated outdoor private areas. It firstly outlines general requirements and then looks at how this can be achieved through more detailed thematically structured advice and requirements. Themes covered, and which relate to climate change mitigation and adaptation are:

- Sustainable materials;
- Living walls and roofs as part of green and blue infrastructure;
- Reducing waste;
- Natural temperature, lighting and air quality control;
- Renewable energy; and
- Future proofing.

Paragraph 5.3

The following recommendations will help developers meet the Council's commitment to achieve net-zero carbon status by 2030, supported and moderated by national policy and local authority guidance, for example contained in the UKGBC Policy Playbook.

1. *If permitted by emerging national policy, all new homes (including conversions) should meet the Future Homes Standard and be net-zero carbon;*
2. *In the meantime, all new homes (including conversions) should achieve:*
 - *Code for Sustainable Homes Level 4 or equivalent;*
 - *A 19% minimum reduction on the dwelling (carbon dioxide) emission rate (DER) against the Target Emission Rate (TER) as defined in the 2013 Building Regulations, and*
 - *Future proofing to enable all new homes to be easily and affordably upgraded to be net-zero carbon by 2030 without diminishing the overall design;*

3. *All new non-residential development (including conversions) providing more than 25m² of floor space should achieve net-zero carbon status;*
4. *Applicants should calculate indoor air quality (CO₂ and humidity) and overheating risk performance for all new buildings (including conversions) providing more than 25m² of floor space, ensuring buildings will operate in accordance with appropriate recommended levels for that use;*
5. *Applicants should demonstrate how the development maximises opportunities for renewable energy but an absolute minimum of 25% renewables should be achieved;*
6. *Applicants should assure that performance will match design stage predictions for all new buildings (including conversions) providing more than 25m² of floor space. This can be done through:*
 - *Demonstration of the development teams own internal processes and quality controls;*
 - *Demonstration of working within a third party process or system to ensure that standards are met on site, e.g. BEPIT Better Building Tool Kit or NEF's Assured Performance Toolkit;*
 - *Certification against independent assessment frameworks, e.g. Home Quality Mark (HQM), BREEAM, Passivhaus and Energiesprong; and*
 - *Energy assessment which, as a minimum should include the following:*
 - i. *A calculation of the energy demand and carbon dioxide emissions for the proposed buildings using approved Building Regulations software and carried out by a qualified energy assessor;*
 - ii. *Evidence that, as far as practicable, the development's design has been optimised to take into account solar gain, daylighting, ventilation and air quality (Design Optimisation);*
 - iii. *Evidence that, as far as practicable, the development's fabric performance minimises energy loss (Fabric Improvement); and*
 - iv. *Evidence that renewable energy sources have been considered and incorporated into the development where appropriate.*

Interim Policy 13:

Developers should demonstrate how their proposals would promote travel by sustainable transport modes in a manner and to a degree proportionate to the significance of the development proposed, particularly active travel modes (walking and cycling).

Interim Policy 14:

Taking into account current national policy, new development should comply with the additional electric vehicle parking and charging standards below:

- All new parking spaces should be adequate for electric vehicle fast charging (7 – 22 kW), including through local electricity grid reinforcements, substation design and ducting;
- All new homes with on-plot parking should be provided with at least one installed charging point; and
- At least 20% of parking spaces in new developments should be provided with installed fast charging points, increasing in accordance with the Road to Zero Strategy (see main policy text).

The applicant has given consideration towards each of the above Interim Policies with proposals for each policy detailed within this report, and summarised in Table 9 included within the appendices.

4. SUSTAINABILITY STRATEGY

4.1 REDUCING ENERGY THROUGH PASSIVE DESIGN

Passive architecture uses daylight, solar energy, shading and stack or wind-driven ventilation to illuminate, heat, shade and where necessary, ventilate/cool the house, requiring less (mechanical) energy to meet the health and well-being standards of the occupants.

The site characteristics relating to the local climate, landscape, scale and size of construction have a passive impact on the future energy requirements and therefore savings can be achieved by taking these factors into account.

The criteria that most affect the potential for sunlight and solar gain are the orientation and structure of buildings, but these are usually influenced by factors other than energy conservation or bioclimatic design considerations (e.g. aesthetics, function, etc.).

The dwellings are orientated to include south facing facades and are sited to prevent overshadowing of neighbouring properties. This would provide access to natural daylight and passive solar power, which will minimise the need for artificial indoor lighting and space heating, and therefore reduce the associated energy demand.

The development incorporates the existing landform and features to provide sufficient blue and green infrastructure within the development. This will aid in reducing the heat island effect, helping to mitigate overheating.

Zonal heating and ventilation systems and controls are to be used allowing areas subject to high solar gain to occupy their own temperature control zone. Dynamic controls reduce energy waste.

4.2 SUSTAINABLE DESIGN AND CONSTRUCTION: MATERIALS AND WASTE

The selection of materials is determined by a number of factors, such as architectural context, design rationale, carbon embodiment and maintenance requirements. The proposed development will concentrate on sustainable design, with selected materials in line with local vernacular and landscape character.

The BRE Green Guide to Specification is a simple guide for design professionals. The guide provides environmental impact, cost and replacement interval information for a wide range of commonly used building specifications over a notional 60-year building life. The construction specification will prioritise materials within ratings A+, A or B. Preference will be given to the use of local materials & suppliers where viable to reduce the transport distances and to support the local economy.

Wherever feasible, there will be a commitment to using materials that are also from renewable sources and recycled e.g. secondary aggregates. The use of recycled materials (e.g. crushed concrete from waste used for hard-standing or recycled fibreglass insulation) has zero embodied energy impact, other than that expended in their processing or transport.

Timber would be sourced, where practical, certified by FSC, PEFC or an equivalent approved certification body and all site timber used within the construction process would be recycled.

All insulation materials will have a zero-ozone depleting potential.

Construction Waste will be managed during both the construction and operational phases according to the nationally and locally recognised the waste hierarchy.

Waste hierarchy

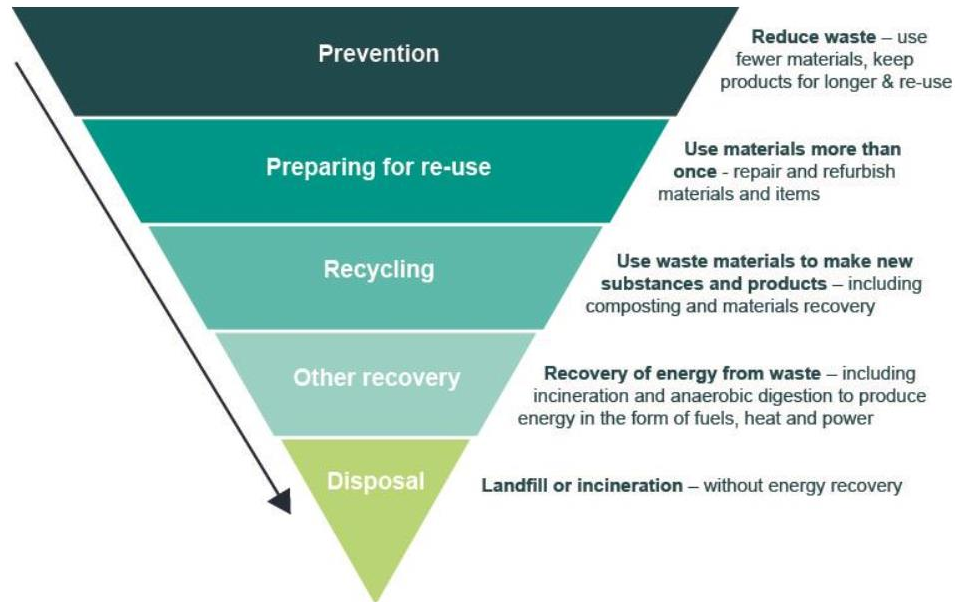


Figure 4.1: The Waste Hierarchy, Defra 2011

Step 1: Eliminate Waste

Construction practice and design should reduce waste wherever possible through measures including:

- efficient procurement avoiding over-supply and excessive packaging; and
- eliminating waste at the design stage.

Step 2: Reuse waste materials

Reuse waste materials, ideally in its current location, avoiding the energy costs associated with transport and recycling.

Step 3: Recycle/compost waste materials

Recover materials through recycling and substitute for primary materials. Compost organic material to produce rich soils that replace fertilisers, ideally in a closed system to avoid the emissions released by organic material in landfill.

Step 4: Recover energy

If it cannot be reused or recycled, use waste instead of fossil fuels in energy generation to recover embodied energy.

Step 5: Disposal to landfill

Usually the last resort. Disposal to landfill wastes materials and embodied energy.

Construction operations generate waste materials as a result of general handling losses and surpluses. These wastes can be reduced through appropriate selection of the construction method, good site management practices and spotting opportunities to avoid creating unnecessary waste.

Targets will be set to promote resource efficiency in accordance with guidance from WRAP, Envirowise, BRE, DEFRA and Uttlesford District Council.

During the construction phase, the principal contractor, will be required to implement the Site Waste Management Plan (SWMP) which will detail responsibilities for resource management, what 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. It will also cover handling and storage of materials to avoid damage, efficient purchasing arrangements to minimise over ordering and segregation of construction waste to maximise potential for reuse/recycling.

The development will be constructed using industry leading procedures for the on-site segregation of waste products and will look to segregate waste under following categories

- Mixed Waste
- Light mixed and compactible
- Inert
- Timber
- Plasterboard
- Mixed Metals

- Hazardous
- Other

A designated area will be identified for waste management for each phase and clear signage will be provided to ensure correct segregation of waste.

Waste will be minimised using the following techniques:

- Managing materials efficiently
- Consideration taken for build dimensions to avoid cut bricks, offcuts plasterboard etc.
- Mass balancing exercise will be undertaken to retain as much material on site as possible therefore minimising waste to landfill
- Site layout and programme reviewed to maximise the reuse of site won materials
- Suppliers will be responsible for their own removal of packaging

Management reports will be produced at an agreed period where actual recycling quantities achieved will be reviewed against targets set.

Household waste

The waste storage space for the dwellings will align with Uttlesford District Council's collection practices. Uttlesford District Council currently offers the following domestic waste collection services for houses and it will be implemented on this development:

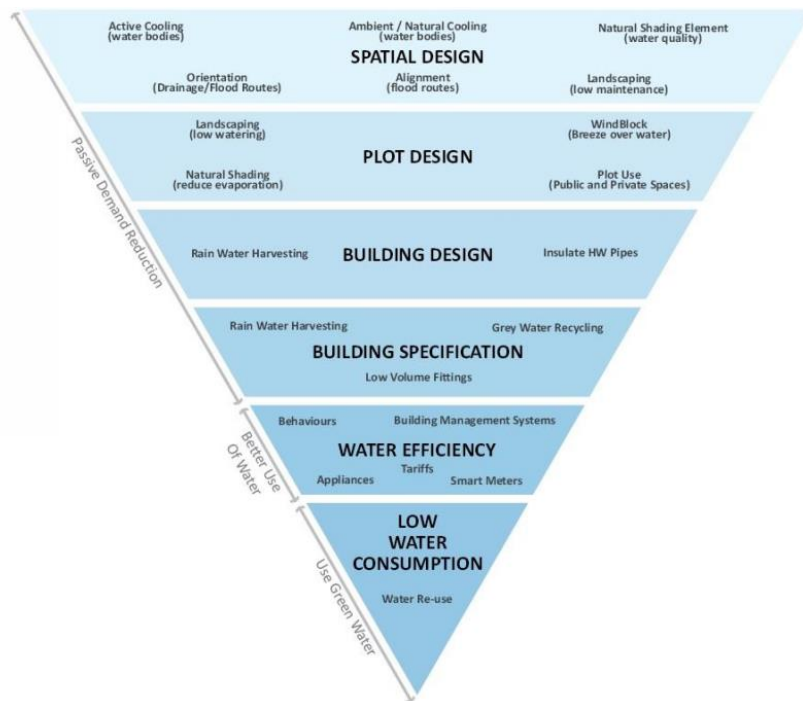
- Black Waste Bin - non-recyclable/ non-compostable material. Bins are 180 litre wheeled bins and are collected fortnightly;
- Green Recycling Bin - recyclable materials including plastic bottles, tubs, bags, glass, foil, and cardboard. Bins are 240 litre wheeled bins and are collected fortnightly; and
- Brown Food Waste Caddy – general food waste. Caddies are 23 litres and are collected weekly.

4.3 WATER CONSERVATION

The Water Conservation Strategy presents a plan for delivering a sustainable approach to the consumption of water. It sets out the key design solutions that are planned for the development site. It also sets out the standards which development on the site will achieve, in line with local and national policy requirements, with regards to water conservation.

The development site will adopt the nationally recognised water saving hierarchy. The water hierarchy in development is illustrated in the Figure below.

Figure 2: Water Hierarchy



The Water Conservation Strategy will include the following principles:

- **Water Protection** – focuses on the protection of source water and the reduction of potential water wastage through the design and delivery of an efficient on-site distribution network;
- **Behaviour Change** – behaviour change will be crucial to support any water conservation measures or design features and new residents will be encouraged to reduce water use;
- **Reducing Usage** – focuses on the reduction of the use of potable water for different uses across the development site including households, other building, and for landscaping and public realm;
- **Management and Maintenance Responsibilities** – sets out how the above potential strategies will be developed, delivered, operated and monitored going forward.

Water Protection

The design of strategic potable water infrastructure will be focused on delivering a robust on-site distribution network that reduces water wastage and leakages. Therefore, the design of potable water infrastructure will first aim to anticipate reasonable consumption rates and design efficient pipework distribution systems with appropriate leak prevention and detection systems.

Behaviour Change

Behaviour change is an approach to reduce water usage and ensure that appliances and water-related infrastructure are being used appropriately. Behaviour change mechanisms aim to empower individuals and groups to take appropriate actions in understanding the implications of water use and the associated costs.

New residents will be encouraged to reduce water use through information provided in a home user manual. This will form part of a wider welcome pack containing, for example, travel planning information.

Reducing Usage

Household water reduction measures will include the following where applicable:

- Water efficient taps.
- Water efficient cisterns.
- Low output showers.
- Flow restrictors to manage water pressures to achieve optimum levels.
- Water meters to all premises with guidance on water consumption and savings.

Advice will be provided by the Developer to the residents through a comprehensive Home Owners Welcome Pack, detailing how to make optimum use of the devices installed around the home. Further, in marketing the scheme sustainable elements such as water reduction will be promoted.

The following specification or similar will be adopted on the development to ensure that the internal water use is reduced to a maximum of 110 litres per person per day in line with Uttlesford District Council's Interim Policy 3.

Each garden will also be provided with a water butt to allow watering of gardens whilst reducing mains water usage

Table 1: Specification of flow rates and volumes for water using appliances

Water using Appliance	Specification
WC Cisterns	Dual Flush to be limited to maximum of 6/3
Baths	Capacity no greater than 190 litres
Basin taps	Flow rates to be no greater than 3 litres/minute
Kitchen taps	Flow rates to be no greater than 6 litres/minute
Shower	Flow rates to be no greater than 8 litres/minute
Water softener	Not to be installed
Washing Machine	Water usage to be limited to 8.17 Litres per KG
Dishwasher	Water Usage to be limited to 1.25 litres per place setting

Table 2: Water Calculations

Water Calculations					
Installation Type	Unit	Capacity/ Flow Rate	Use Factor	Fixed use (l/p/day)	Total Use (l/p/day)
WC Single Flush	Volume (l)	0.00	4.42	0.00	0.00
WC Dual Flush	Full Flush (l)	6.00	1.46	0.00	8.76
	Pt Flush (l)	3.00	2.96	0.00	8.88
WC's (Multiple)	Volume (l)	0.00	4.42	0.00	0.00
Taps Exc. Kitchen	Flow Rate	3.00	1.58	1.58	6.32
Bath (shower present)	(l/s)	190.00	0.11	0.00	20.90
Shower (bath present)	(l/s)	8.00	4.37	0.00	34.96
Bath Only	(l)	0.00	0.50	0.00	0.00
Shower Only	(l/s)	0.00	5.60	0.00	0.00
Kitchen Taps	(l/s)	6.00	0.44	10.36	13.00
Washing Machines	(l/kg/dry)	8.17	2.10	0.00	17.16
Dishwashers	(l/place)	1.25	3.60	0.00	4.50
Waste Disposal	(l/s)	0.00	3.08	0.00	0.00
Water Softener	(l/s)	0.00	1.00	0.00	0.00
Total Calculated Water Use (l/p/day)					114.50
Grey/Rain Water Reused (l)					0.00
Normalisation Factor	(Factor)				0.91
Total Internal Consumption (l/p/day)					104.20
External Water Use Allowance (l)					5.00
Total Consumption Part G (l/p/day)					109.20

Management and Maintenance Responsibilities

This section details the responsibilities of the Water Conservation Strategy in order to clarify the process for incorporating water conservation design features and measures going forward.

The Architect and design team of the Developer will take responsibility for 'designing in' water consumption reduction measures in the design of the development.

The overall responsibility for construction management should be assumed by the Developer. The Developer is responsible for providing reasonable direction to any Contractor, as far as necessary to enable the Principal Contractor to comply with water consumption reduction measures.

The Principal Contractor will be charged with responsibility for water consumption reduction – for both construction practices and for the inclusion of specified measures within the development.

During construction, water usage will be monitored and managed. This could be conditioned via a Construction Environmental Management Plan (CEMP).

The responsibility for installing the water conservation techniques for the development site proposals will lie with the appointed Contractors. Implementation of these techniques will form an integral component of building construction.

4.4 ENABLING SUSTAINABLE LIFESTYLES

Sustainable Transport

Electric Vehicle (EV) Charging Points

Sufficient provision of electric vehicle (EV) charging points in new developments drives the uptake of EVs, bringing benefits in terms of air quality and (taking into account the decarbonisation of the energy grid) carbon reductions. EVs also provide energy storage that, when used alongside other measures, such as smart meters, can deliver smart energy networks.

In line with Uttlesford District Council's Interim Policy 14, Electric Vehicle Charging points will be installed. As the dwellings will have on-plot parking, each dwelling will be provided with at least one EV charging point.

Sustainable Travel

The development proposal will include a new vehicular access to Cornells Lane. This adopted lane can provide safe and convenient access to the application site and highway network. This is a lightly trafficked lane. The existing access will be closed to traffic, but reused as a new pedestrian route which will provide safe and convenient access into the heart of the village of Widdington. Amenities within Widdington village include a public house, village hall, play area, allotments, a church and bus stops. There is a regular bus service which connects the village to local towns and villages. This allows access for children to local primary and secondary schools. Widdington has a regular bus service, which provides access to nearby railway stations, connecting it to towns and cities such as Central London, Cambridge and Harlow. Reliance on motor vehicle is therefore reduced as more sustainable methods of public transport are within comfortable reach of the development site. This is in line with Chapter 9 of the NPPF, and Uttlesford District Council's Interim Policy 13, which promote sustainable transport.

The intention is to provide a travel pack to each household in order to encourage the use of sustainable transport. The travel pack will include items such as travel vouchers and further information.

Additionally, the proposed development complies with Uttlesford District Council's parking standards as there is ample space provided for off street parking at each dwelling, within the garages/car ports and forecourt parking.

Each dwelling will also have home working facilities provided through a study/home office. This recognises the increasing trend for employees to work from home and will provide the future occupants with the potential to further limit their travel and carbon footprint.

4.5 ECOLOGY

The Ecological Appraisal prepared by Southern Ecological Solutions (dated June 2021) describes the site as consisting of a poor semi-improved grassland field, hedgerows and scrub. A hedgerow forms the southern boundary of the site. The western boundary is close to residential gardens and the northern boundary abuts the remainder of the grassland field (to be retained and enhanced for biodiversity). The eastern boundary lies close to a wooden fence, which has been installed to prevent access to the site by members of the public via the adjacent footpath.

It is considered that the site may provide suitable habitat for a small number of protected and/or notable species. A summary of likely impacts and mitigation is provided in the table below:

Table 3: Summary of Likely Impacts, Mitigation and Enhancement Measures and Residual Impacts

Feature	Likely Impacts	Further Surveys	Likely Mitigation and Enhancement Measures	Residual Effect	Significance
SSSI/LWS	N/A	N/A	N/A	Neutral	National/Local
Habitats	Loss of small area of species-poor semi-improved grassland, and minor losses of other habitats Lighting impacts on boundary habitats.	Biodiversity Net Gain calculations would quantify the amount of net gain.	Tree/hedgerow protection areas around habitats to be retained. Enhancement of retained hedgerows and scrub through sensitive management and planting of native species. Provision of an ecology area to the north of the development (approximately 0.1ha). Implementation of wildlife sensitive lighting.	Positive	Local
Badgers	Potential injury/death	A pre-construction survey for	Precautionary construction techniques.	Positive	Site

	during construction. Loss and disturbance of commuting and foraging habitat.	badgers should be undertaken prior to construction if no commenced withing 12 months of report.	Enhancement of retained boundary habitats. Planting of fruit-bearing tree species within the development.		
Bats	Loss and disturbance of commuting and foraging habitat.	N/A unless boundary habitats are significantly affected.	Implementation of wildlife sensitive lighting (no lighting currently proposed). Native species planting along boundaries of the development. Provision of bat boxes on retained trees and/or housing.	Positive	Local
Birds	Loss of nesting habitat and destruction of nests	N/A	Any vegetation clearance to be undertaken outside of breeding bird season or after an ecologist has confirmed no active nests. Retention and enhancement of boundary habitat including wildlife friendly planting. Bir box installation.	Positive	Site
Great Crested Newts	Considered unlikely to impact upon GCN	N/A	Keep sward height of grassland low before construction commences. Removal of small section of hedgerow under ecology supervision. If a GCN is found on site during construction, works should stop immediately	Neutral	Site

			and a licence from Natural England applied for. Native planting at the boundaries, log piles within retained grassland and a relaxed mowing regime in the area.		
Reptiles	Loss of resting, foraging, and commuting habitat. Potential for death/injury.	N/A	Retention of a low sward height within the grassland. Two-staged phased habitat manipulation under ecology supervision on areas suitable for reptiles. Native planting incorporated into landscape scheme as an enhancement. Relaxed mowing, log piles and grassy margins within retained grassland to the north of the site and along the hedgerow boundaries.	Positive	Site
Other notable species	Loss of foraging habitat Injury and/or death of hedgehogs	N/A	Sensitive habitat removal. Retention of grassland and boundary habitat where possible, managed for wildlife and enhancement with wildlife friendly species. Creation of 'hedgehog highways'.	Neutral	Site

The Ecological Appraisal concluded that through the recommended surveys and precautionary methods, it is considered that all significant impacts upon biodiversity, including any potential adverse impacts upon specific protected species, habitats and designated sites will likely be able to be wholly mitigated in line with relevant wildlife legislation, Chapter 15 of National Planning Policy Framework (MHCLG, 2019).

A new 0.29 acre ecological area will be provided to the north of the site. This area is to be planted with trees and wild flowers within the grassland. An ecology pond with a bog area will also be created for wildlife. The pond will provide a 'beach' area for access for wild birds and other animals. The new ecological area will increase wildlife to the locality by increasing habitat.

5. CLIMATE CHANGE ADAPTION

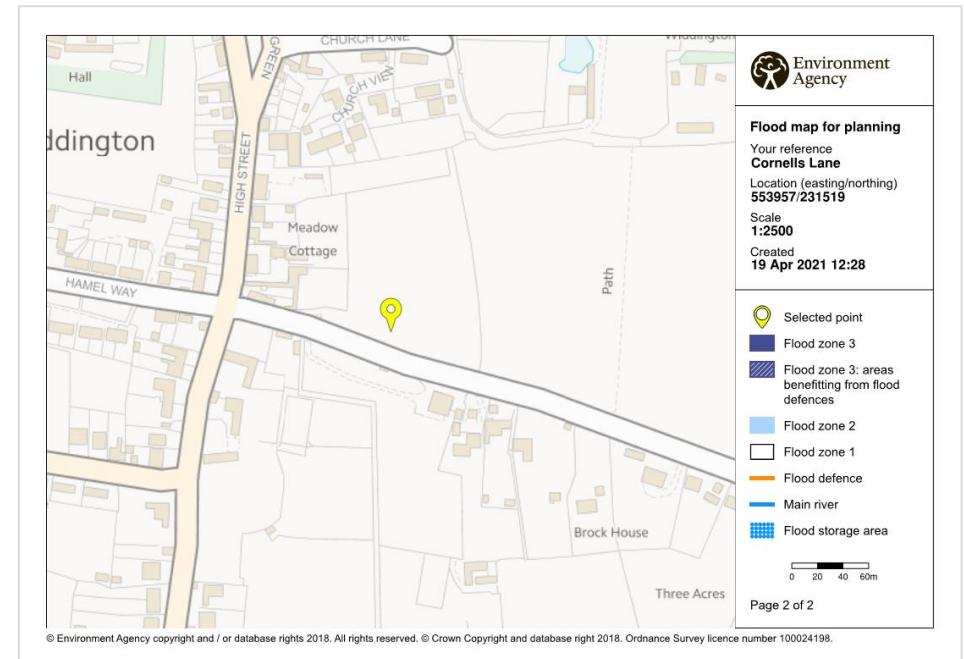
5.1 FLOOD RISK AND DRAINAGE

The site is not at risk of flooding (Environment Agency Zone 1). Permeable surfaces for sustainable drainage are proposed to the private drive and individual plot turning areas.

As a minor scheme, details of surface water drainage can be agreed via condition. It will be noted that previous applications across the whole paddock for much larger schemes were not refused on grounds of flood risk.

Uttlesford District Council's Policy GEN3 (Flood Protection) is complied with in respect of flood risk as well as the relevant provisions of the NPPF, such as paragraph 155 which seeks to direct development away from areas of highest flood risk.

Figure 3: Flood Map



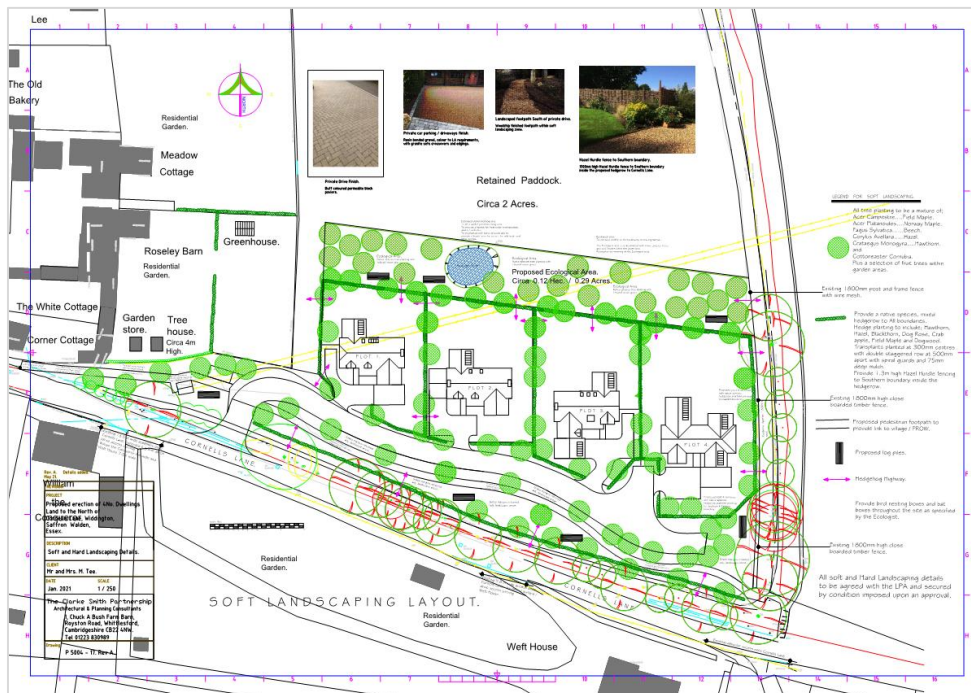
5.2 LANDSCAPING

A sustainable landscape should be designed to be both attractive for the end user but also balanced with the local climate and environment and needs minimal resource input.

The landscape design for the development is one that is functional and most importantly environmentally considered. As part of a sustainable landscape, it pays close attention to preserving our limited resources, reducing waste at all stages, helping to prevent air, water and soil pollution.

The Landscaping Layout has been prepared by The Clarke Smith Partnership and highlights the key opportunities within the development. The landscaping layout is provided below.

Figure 4: Landscaping Layout



The landscaping layout looks to create a strong green structure to which the proposed development fits into, with a focus on creating a variety of environments.

Using the right plant in the right place, appropriate use of grass and the focus being on xeriscaping will be a dominating factor when one fully considers the components of sustainable landscaping and this will be drawn out in detail at the next stages.

Carbon sequestration has been considered and will be further detailed with the correct selection of trees to maximise on this approach. The design will seek to achieve a carbon sink that accumulates and stores carbon for an indefinite period of time and thereby lowers the concentration of CO₂ in the atmosphere within the local area.

As well as specifying the right plant, the design also needs to consider the sun, direction of wind, soils on site, topography, shaded areas with the goal of reducing the need for artificial watering and this will be the approach going forward. A sustainable landscape also limits the human impact on the surrounding ecosystem. However, planting species non-native to the landscape may introduce invasive plant species as well as new wildlife that was not in the ecosystem before, therefore the need for careful plant selection is vital.

The design will be looking to implement the following;

- Mixed hedgerow to all boundaries;
- Hedge planting to include Hawthorn, Hazel, Blackthorn, Dog Rose, Crab Apple, Field Maple and Dogwood;
- Bird nesting boxes and bat boxes throughout the site;
- A number of hedgehog highways will be installed to fences/hedgerows;
- Selection of fruit trees within garden areas;
- A new tree structure for the future and will positively contribute to carbon sequestration;
- Species rich grasses within lawn areas;
- Strengthen and re-enforcing the sites boundaries with native planting of local provenance to support the local landscape character, provide new wildlife habitats and foraging / feeding opportunities;
- Selection of plants that rely on limited water for establishment;
- Selection of local plant materials to minimise transport footprint;

- Appropriate tree planting to the private drive and new footpath to help control temperatures during the summer months;
- New tree stock on site that will assist with air pollution;
- Significant new plant stock on site that will prevent soil erosion;
- Selection of trees and plants to provide food for the end user and the wildlife;
- The new trees and plants will also contribute to reducing the risk of flooding;

The proposed landscaping scheme will incorporate a selection of native fruiting and flowering plants and trees. The new tree and plant stock will be carefully selected to local conditions and site suitability and species will be subject to agreement with the LPA through the planning application.

5.3 OVERHEATING

With a continual drive for energy efficiency through both the Building Regulations and Local Planning Authority requirements, the risk of overheating to dwellings in the summer months is becoming more prevalent. Overheating can be a mild discomfort or a hazard to health if managed incorrectly, so it is vitally important that overheating risk be mitigated to ensure the dwellings will be both energy efficient and comfortable to live in.

Summer overheating is caused when there is excess build-up of heat within a dwelling. This can occur where there is excessive solar gain and limited means to absorb excess heat into the building fabric or purge this heat through ventilation. Summer overheating can be managed through a variety of measures and the chosen solution will vary from development to development. These measures can include:

Limiting solar gain

Glazing g value: This is a measure of how much solar radiation penetrates the glazing. The lower the g value the less solar gain enters a dwelling. Glazing with low g values may have a darker tint to the glazing, so aesthetic considerations are also a factor. Lower g values (below 0.5) are often required in apartments with single facades. Specifying g values below 0.2 will increase cost substantially and also limit the number of available suppliers for glazing.

Internal Shading: Blinds can be used to limit solar gain in a dwelling. They can either be automatic, triggered by the sun's presence on the window, or operated manual. Manual operation requires the occupant to be present however, so this option isn't a reliable option when trying to mitigate overheating risk.

Purging excess heat build up

Thermal Mass: thermal mass is the measure of a dwellings ability to absorb energy. A dwelling with a high thermal mass (high proportion of concrete) has the ability to absorb heat during the day, which helps maintain a steady internal temperature. This heat can be released back into the dwelling at night-time, when the temperature of the dwelling is lower, helping to maintain a consistent internal temperature.

Ventilation: A dwelling can be ventilated to purge excess heat build-up. This can be done through openable windows, especially where cross ventilation is possible. Where ventilation through windows is not possible, due to security, noise or pollution issues, Mechanical Ventilation can be used. The ventilation rates required to purge a dwelling can often be quite high, requiring oversized systems.

SAP calculations have been used to assess the risk of overheating. Each dwelling type has been assessed as per requirements of SAP 2012 Appendix P. The results are detailed as follows and show that all types have at worst a slight risk of overheating during the summer months and therefore meet the requirements of Building Regulations. This has been achieved using the following strategy:

Table 4: SAP Appendix P Overheating Results

Dwelling	Dwelling Type	Overheating June	Overheating July	Overheating August
Plot 1	House	Not significant	Slight	Slight
Plot 2	House	Not significant	Slight	Slight
Plot 3	House	Not significant	Slight	Slight
Plot 4	Bungalow	Not significant	Slight	Slight

This has been overheating risk has been minimised using the following strategy:

- Keeping the thermal mass as low as possible.
- System 3 mechanical ventilation, supplemented by the provision of openable windows, will be employed within all dwelling types to provide fresh air.
- The dwelling facades will have a balanced amount of glazing to mitigate direct solar heat gain whilst optimising daylight penetration.
- The on-site landscape design includes trees and vegetation to help mitigate the microclimate on the site and reduce the risk of internal overheating and heat island

effect from the development. Additionally, a new ecology area will provide additional trees, vegetation and a pond.

- Internal heat gains will be minimised through the use of energy efficient lighting and equipment, and hot water distribution pipework will be highly insulated to prevent heat loss into the dwelling spaces.

5.4 DECENTRALISED RENEWABLE AND LOW CARBON ENERGY

An energy strategy (PA-ES-MT-WN-21-01 dated June 2021) has been prepared by Abbey Consultants (Southern) Ltd which details the proposed fabric enhancements and renewable energy proposals.

The proposed site will be built under Part L 2013 (with 2016 amendments) of the Building Regulations and in line with Uttlesford District Council's Interim Policy 12 target to achieve a 19% minimum reduction of the Dwelling Emission Rate (DER) against the Target Emission Rate (TER) as defined in the 2013 Building Regulations.

The development will reduce regulated CO₂ emissions by integrating a range of passive design and energy efficiency measures throughout the building. These measures include improving building fabric standards beyond the requirements of Part L of the Building Regulations. These measures enable the proposed scheme to go beyond Target Emission Rates (TER) and Target Fabric Energy Efficiency (TFEE) minimum standards via energy efficiency measures alone.

Following reduction of the energy demand through fabric and energy efficiency improvements, individual Air Source Heat Pumps (ASHP) have been proposed to supply hot water and space heating to the dwellings. In addition, it is proposed to install 7.5 kWp of PV to the east facing roof elevations across the development.

The regulated energy CO₂ savings expressed in terms of actual and percentage reduction after each stage of the energy hierarchy for the residential parts of the development are provided in the following tables.

The proposed individual ASHPs and inclusion of 7.5 kWp of PV, along with energy efficiency improvements, save 5.11 tonnes of CO₂ per year which represents a 41.85% saving over a gas baseline unit and is in excess of a 60% improvement over a Building Regulations baseline. This exceeds the requirements of Uttlesford District Council's Interim Policy 12, which stipulates a minimum 19% reduction is to be achieved.

Total energy demand savings are also expressed after each stage of the energy hierarchy for the development. The 'Be Green' measures alone will provide a saving of 35.16 MWh per year which contributes towards a 74.15% saving in total energy demand compared to a Building Regulations baseline.

Table 5: Summary of CO₂ Savings Over Gas Baseline

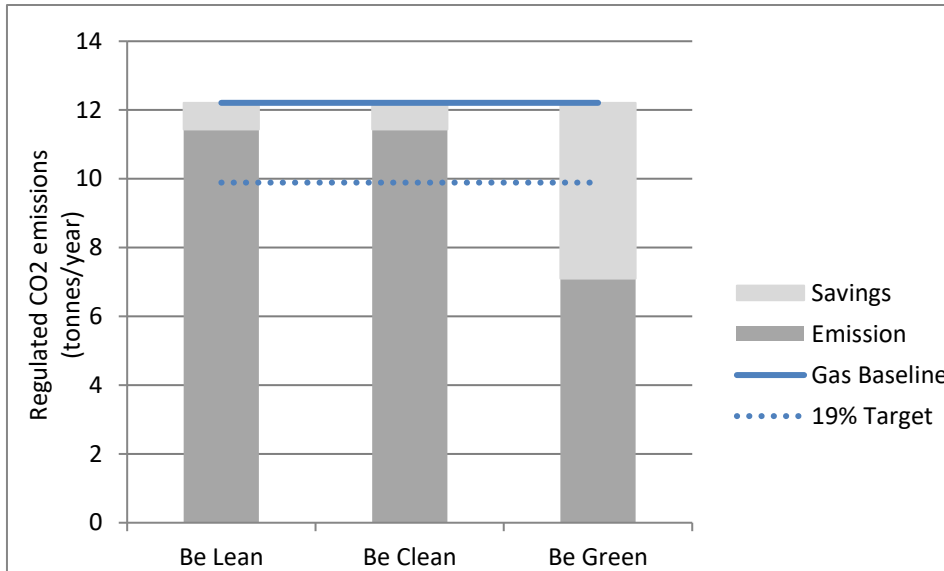
Element	CO ₂ - Regulated (tonnes/year)	Total CO ₂ Savings	% Saving
Baseline	12.21	0.00	0.00
Be Lean	11.44	0.77	6.31
After Heat Network	11.44	0.77	6.31
Be Green	7.10	5.11	41.85

Building Regulations assessment of the TER allows a fuel factor for use of electricity and therefore the baseline carbon emissions are different than for a gas heated dwelling. When the energy strategy after 'Be Green' is compared against a baseline of Building Regulations the carbon savings are much greater. The following table shows the carbon savings against a TER.

Table 6: Carbon Emissions Building Regulation's (TER) comparison

Element	CO ₂ - Regulated (tonnes/year)	Improvement %
Baseline	18.18	
Be Green	7.10	60.95%

The overall reduction in regulated carbon emission to the residential units compared to a gas baseline can be illustrated graphically as below.



The overall reduction in energy usage to the residential units can be illustrated graphically as below.

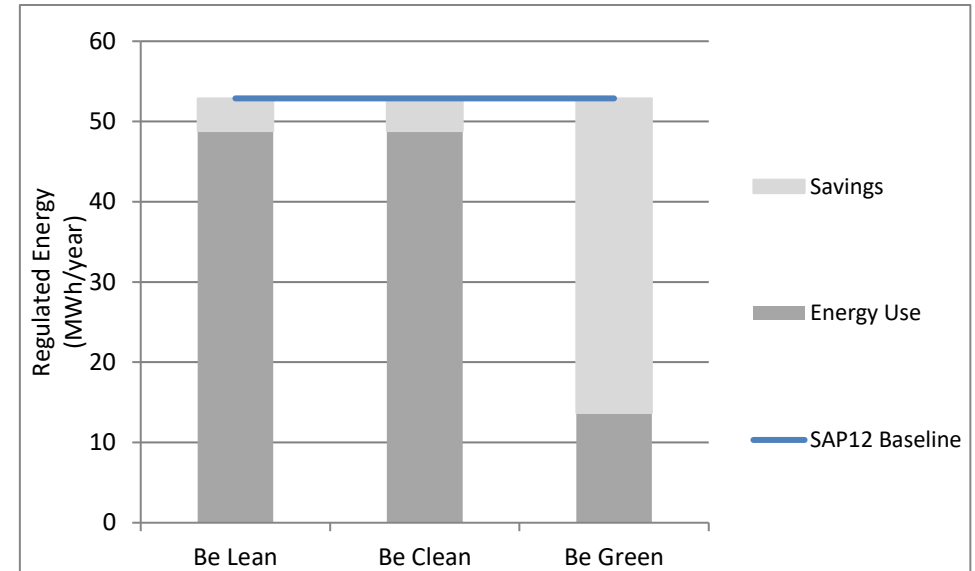


Table 7: Energy Usage and Savings

Element	Energy - Regulated (MWh/year)	Total Savings (MWh/year)	% Saving
Residential Baseline	52.88	0	0.00
Be Lean	48.83	4.05	7.66
After Heat Network	48.83	4.05	7.66
Be Green	13.67	39.21	74.15

The proposed strategy has first reduced energy demand through fabric and energy efficiency measures. The overall Part L Fabric Energy Efficiency (FEE) performance has been reviewed for the 'be lean' position and compared to the baseline stage of the energy hierarchy. The total improvement has been shown to be circa 16.74% over building regulations.

Table 8: Residential FEE Performance

Element	Target Fabric Energy Efficiency (TFEE) kWh/m ² /year	Dwelling Fabric Energy Efficiency (DFEE) kWh/m ² /year	Improvement (%)
Development Total	51.97	43.09	16.74

Summary

The proposed energy strategy achieves and meets the following requirements:

- Complies with Part L 2013 building regulations (with 2016 amendments) and shows a 60.95% carbon saving over a Building Regulations baseline (TER).
- Exceeds the 19.00% minimum reduction on the dwelling (carbon dioxide) emission rate (DER) against the Target Emission Rate (TER) of 2013 Building Regulations as required in Uttlesford District Council's Interim Policy 12.
- **Saves 5.11 tonnes of carbon per year over a gas baseline.**
- Shows a 41.85% carbon saving over a gas baseline.
- Total energy saving of 74.15% compared to a Building Regulations baseline (TER).
- Includes improved optimal building fabric improvements, energy efficient design of building services.
- An energy saving of 35.16 MWh/year is to be achieved through the inclusion of individual Air Source Heat Pumps and 7.5 kWp of PV across the scheme.
- Includes improved optimal building fabric improvements and energy efficient design of building services.
- Exceeds the TFE minimum reduction requirements by 16.74%.

6. APPENDICES

6.1 APPENDIX A – SUMMARY OF APPLICANTS PROPOSALS TO UTTLESFORD DISTRICT COUNCIL’S INTERIM CLIMATE CHANGE POLICIES

Table 9: Summary table of Applicants proposals responding to Uttlesford District Council’s Interim Climate Change Policies

Uttlesford District Council Interim Climate Change Planning Policy	Applicants Proposals
<p>Interim Policy 1: Developers should demonstrate the path that their proposals take towards achieving net-zero carbon by 2030, and all the ways their proposals are working towards this in response to planning law, and also to the guidance set out in the NPPF and Planning Policy Guidance. This should include:</p> <ul style="list-style-type: none"> iii. Locating the development where the associated climate change impacts and carbon emissions, including those derived from transport associated with the intended use of the development can be minimised, and iv. Promoting development which minimises carbon emissions and greenhouse gas emissions and maximises the use of renewable or low carbon energy generation. 	<p>The following steps have taken consideration towards Interim Policy 1:</p> <ul style="list-style-type: none"> • An Energy Statement has been produced and forms part of the submission. This follows the established and widely accepted energy hierarchy of ‘Be Lean’, ‘Be Clean’ and ‘Be Green’. It details what measures have been taken at each stage in order to reduce the carbon emissions of the development. • The measures detailed within the Energy Statement are estimated to reduce carbon emissions by 60.95% when compared to the current Building Regulations baseline (TER). • The measures detailed within the Energy Statement are estimated to save 5.11 tonnes of CO₂ per year when compared to a gas baseline. • The air source heat pump’s proposed to provide the dwellings with heating and hot water will support the path to achieving net-zero carbon as the energy required for the heat pumps to operate can be supplied from electricity generated using renewable energy sources. • Carbon emissions associated with transport will be limited by: <ul style="list-style-type: none"> – Each plot being provided with an electric vehicle charger. – A dedicated home-work space is provided within each dwelling to support the shift towards working from home, thus reducing carbon emissions connected to commuting to work places. – Travel Pack to provide vouchers for use of local bus service to encourage sustainable travel choices.
<p>Interim Policy 2: Developers should demonstrate how site surroundings and heritage have influenced their choices over climate change mitigation and adaption proposals.</p>	<p>Development includes Photovoltaic (PV) panels on roof slopes which do not face towards Conservation Area. However, additional PV panels could be introduced to this direction should the LPA prefer. This would further increase renewable energy on the scheme.</p>

<p>Interim Policy 3: Development should be designed to minimise consumption of water, and should make adequate and appropriate provision for water recycling. Development should also protect and enhance local water quality including measures to support improvement to a water body's Water Framework Directive status. A condition on all planning permissions for the erection of new residential development will be imposed to trigger the optional requirement under Part G of the Building Regulations for the maximum potential consumption of wholesome water of 110 litres per person per day.</p>	<p>A specification and water calculations have been provided within the Energy and Sustainability Statements demonstrating how internal water use will be reduced to 110 litres per person per day.</p>
<p>Interim Policy 4: Development should be designed to provide adequate mitigation against flood risk and to embed suitable water recycling, waste water and waste management so as not to cause contamination of groundwater, particularly in recognised protection zones, of surface water or run-off to river catchments. Where there is the potential for contamination, effective safeguards should be put in place to prevent any deterioration in current standards. A maintenance plan will be required detailing who will be responsible for maintenance of SuDS and how they will be maintained. This to ensure that SuDS are maintained for the lifetime of the development.</p>	<p>The following steps have taken consideration towards Interim Policy 4:</p> <ul style="list-style-type: none"> • Scheme lies in Flood Zone 1 and therefore only a low probability of flooding. • Permeable surfaces shown to private drive and individual plot areas. • Further measures to be investigated with a view to providing a sustainable drainage scheme. • Minor housing scheme - Details can be agreed via condition.
<p>Interim Policy 5: Developers should demonstrate how their proposals would not lead to any material decrease in air quality or to significant adverse effects on the environment or amenity and, where relevant, how they would comply with the Saffron Walden Air Quality Action Plan to minimise effects on local air quality and reduce CO₂ emissions.</p>	<p>The following steps have taken consideration towards Interim Policy 5:</p> <ul style="list-style-type: none"> • Site does not lie in an Air Quality Management Area. • Electric Vehicle Charging Points included to encourage use of vehicles that do not rely on fossil fuels. • Minor housing scheme and circumstances do not require Air Quality Assessment.
<p>Interim Policy 6: Developers should demonstrate how their proposals prioritise the natural environment and how through the design, planning and delivery would result in a biodiversity net gain and enhances multifunctionality and multiple benefits for people, wildlife and habitats.</p>	<p>The following steps have taken consideration towards Interim Policy 6:</p> <ul style="list-style-type: none"> • Preliminary Ecological Appraisal produced (please refer to this document for detail). • Potential for significant biodiversity gain via new off site ecology area (0.29 acres) and on-site measures including significant new landscape planting for wildlife, bird & bat boxes, hedgehog highways. • Ecology/landscape areas link to existing landscape/wildlife corridors. • Existing landscape and vegetated corridor margins retained.

	<ul style="list-style-type: none"> Landscaped permissive footpath corridor created, linking the site to the village and countryside.
<p>Interim Policy 7: Developers should demonstrate how the level of tree and/or hedgerow planting that has been proposed is sufficient to i) contribute towards reducing the impact of the proposals on the environment, and ii) improve living conditions for residents, workers and those using any public areas.</p>	<p>The following steps have taken consideration towards Interim Policy 7:</p> <ul style="list-style-type: none"> Preliminary Ecological Appraisal produced (please refer to this document for detail). Significant numbers of indigenous species tree and hedgerow to be planted across the site, exceeding the target of 5 trees per house. New trees will provide softening impact, complete with retained vegetation. Planting will provide good standards of residential amenity. Tree planting proposed will lead to absorption of CO². New ecology area and other listed ecological measures will add to biodiversity. Landscaped permissive footpath corridor created, linking the site to the village and countryside for benefit of public and site users. Fruit trees proposed in gardens for food production.
<p>Interim Policy 8: Developers should demonstrate to what extent density and the mix of their developments contribute towards climate change mitigation and adaption.</p>	<p>Not applicable to a development of this scale.</p>
<p>Interim Policy 9: Developers should demonstrate what opportunities have been taken at a neighbourhood level to design-in renewable energy infrastructure and community energy schemes for renewable energy as an integral part of the development, how they have been incorporated, or why they have been rejected.</p>	<p>A proposal has been detailed within the Energy Statement to install photovoltaics (PV) cells to the east facing elevations of every plot. The proposed total quantity of PV is 7.5 kWp, which is estimated to offset 2,656 kg of CO₂ per year.</p>
<p>Interim Policy 10: Developers should demonstrate how the sustainability of their proposals has been enhanced by landform and the selected landscape network.</p>	<p>The following steps have taken consideration towards Interim Policy 10:</p> <ul style="list-style-type: none"> Buffers (grassy margins) retained to Cornells Lane vegetation, so that wildlife is undisturbed. Separate pedestrian footpath will be landscaped and parallel to Cornells Lane to increase the landscape screen in this area. Frontage development facing private drive and new footpath 'through' route for permissive use, will generate self-policing. Existing vegetation largely retained.

	<ul style="list-style-type: none"> • Gap for new access kept minimal as no need for additional footways – existing paddock maintenance access to be re-used for contained/separate pedestrian footway to High Street. • Hard surface materials to the new link footpath intended to be high quality appearance and meet Essex CC/UDC requirements.
Interim Policy 11: Developers should demonstrate how future proofing at the layout level has been catered for in their developments.	A heat pump solution has been proposed which will future proof the development from the decarbonisation of the grid, as the energy required for the heat pumps to operate can be supplied through electricity generated by renewable energy sources.
Interim Policy 12: Developers should demonstrate how green and intelligent design and green infrastructure have contributed to the sustainability of their proposals by reference to the themes in Paragraph 5.1, the general recommendations set out in Paragraph 5.3 and the energy hierarchy in Paragraph 5.37.	A detailed Energy and Sustainability Statement have been prepared for this submission. Please refer to these documents for full details on how green/intelligent design and green infrastructure have contributed towards the sustainability of the proposal. Paragraph 5.3 requires that a minimum 19% reduction of the dwelling emission rate (DER) must be achieved against the target emission rate (TER). The strategy detailed in the Energy Statement is achieving a 60.95% reduction which significantly exceeds the 19% target.
Interim Policy 13: Developers should demonstrate how their proposals would promote travel by sustainable transport modes in a manner and to a degree proportionate to the significance of the development proposed, particularly active travel modes (walking and cycling).	The following steps have taken consideration towards Interim Policy 13: <ul style="list-style-type: none"> • Electric vehicle charging points provided. • Travel Pack to provide vouchers for use of local bus service to encourage sustainable travel choices. • 6 days a week hourly bus service provides access to town, villages and train stations (for London, Harlow, Cambridge). • Occupants can walk safely from site to the surfaced footways giving access to village facilities eg bus stops, village hall, pub, church and visiting amenities eg post office, fruit and veg stall, Refill Barn, mobile caterers, recreation/play area and allotments. • New footway will link to PROW network encourage walking and outdoor leisure pursuits. Site is welcoming to the public via this link to aid integration with village. • Site lies off rural road network to encourage easy access to countryside for cycling pursuits and visiting other villages eg Newport railway station lies within cycling distance. • Homes are designed with space for home-working.
Interim Policy 14: Taking into account current national policy, new development should comply with the additional electric vehicle parking and charging standards below:	Electric Vehicle Charging points will be installed. As the dwellings will have on-plot parking, each dwelling will be provided with at least one EV charging point.

- All new parking spaces should be adequate for electric vehicle fast charging (7 – 22 kW), including through local electricity grid reinforcements, substation design and ducting;
- All new homes with on-plot parking should be provided with at least one installed charging point; and
- At least 20% of parking spaces in new developments should be provided with installed fast charging points, increasing in accordance with the Road to Zero Strategy (see main policy text).

