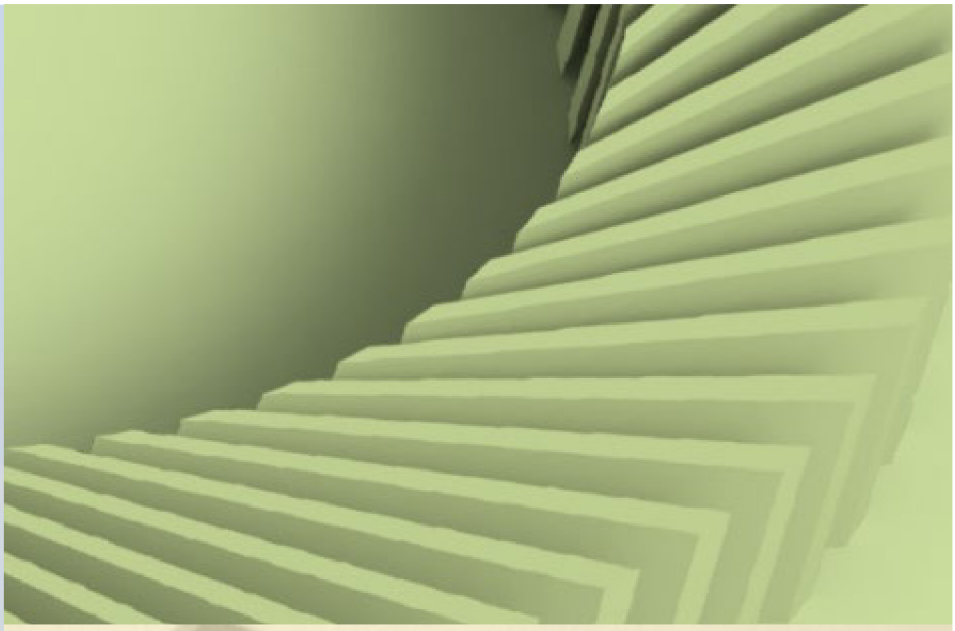
M-EC Consulting Group

Land off Wrotham Road, Meopham

Energy Statement

September 2025



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1	First Issue	MR	AR	29.09.2025

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Appendices

1.0 Introduction

1.1 Purpose of the Report

Instructions were received from M-EC Consulting Group to produce an Energy Statement for an outline planning application on the land off Wrotham Road, Meopham.

The proposed development is situated within the boundaries of Gravesham Borough Council. This statement provides a response to the relevant Gravesham Borough Council documents and policies:

Gravesham Local Plan Core Strategy Adopted September 2014

- Policy CS18: Climate Change

Design For Gravesham - Design Code Supplementary Planning Document - May 2024

- Design principle 6.13 - Energy efficiency and resilience

1.2 Site and Building Description

The application will be submitted in outline, for the erection of up to 350 residential dwellings, public open space and associated works. Approval is sought for the principal means of vehicular access from Wrotham Road and all other matters are reserved

A proposed site parameter plan has been included in Appendix 1.

1.3 Methodology

Applicable policies relating to energy and carbon performance have been identified from the relevant bodies, in this case, Gravesham Borough Council.

Given this is to be an Outline application, an initial assessment has been made against these policies where possible, with guidance and targets being highlighted for the point of reserved matters when designs have been established.

An assessment has been completed to review the potential connection of the proposed development to an existing low carbon heat network. Up to date map data has been provided by the Department for Energy Security & Net Zero Heat Networks Planning Database, to enable the suitability and distance in relation to the location of the proposed development from a low carbon heating network to be reviewed.

In relation to the Part G water requirements, a proposed sanitaryware specification has been assessed against the 105 litre/person/day limit outlined in the Policy CS18 requirements.

2.0 Planning Policy

2.1 Gravesham Local Plan Core Strategy Adopted September 2014

Policy CS18: Climate Change has been determined to be the relevant policy for this statement.

2.2 Policy CS18: Climate Change

Water Demand Management

5.14.41 The Council will seek to manage the supply of water in the Borough and reduce the impact of new development on the supply of potable water as much as possible. In particular, the Council will:

- *Require all new homes to be built to at least level 3/4 of the Code for Sustainable Homes in terms of water use (105 litres per person per day consumption). Where it can be demonstrated that a development is unable to meet these standards, or the additional standards set out below, permission will only be granted if provision is made for compensatory water savings elsewhere in the Borough;*

- *Seek 5% of homes on Key Sites to act as exemplars by meeting level 5/6 of the Code for Sustainable Homes in terms of water use (80 litres per person per day consumption);*

- *Require all non-residential developments of 1,000 sq m and above to meet the BREEAM "excellent" standards of water efficiency and include provision for the collection of rainwater; and*

- *Support proposals to retrofit existing residential properties in ways which reduce water consumption.*

Carbon Reduction

5.14.42 The Council will seek to reduce the overall carbon footprint of the Borough. In particular, the Council will:

- *In the context of national policy on the transition to zero carbon development via amendments to Part L of the Building Regulations, require proposals for development of the Key Sites throughout the Borough and other major development elsewhere in the Gravesend Town Centre Opportunity Area to consider the potential and include proposals for low carbon and renewable energy generation, including combined heat and power. Where choosing not to do so, applicants must submit evidence which demonstrates that compliance is not technically or financially feasible or that improved fabric energy efficiency or an allowable solution results in improved carbon saving benefits;*

- *In the context of national policy on the transition to zero carbon development via amendments to Part L of the Building Regulations, require proposals for development of the Key Sites throughout the Borough and other major development elsewhere in the Gravesend Town Centre Opportunity Area to consider the potential and include proposals for low carbon and renewable energy generation, including combined heat and power. Where choosing not to do so, applicants must submit evidence which demonstrates that compliance is not technically or financially feasible or that improved fabric energy efficiency or an allowable solution results in improved carbon saving benefits;*

- *Support stand-alone decentralised, renewable or low carbon energy development where it is compatible with national policies for protecting the Green Belt and where it accords with policies in this plan, in particular those relating to Development and Design Principles, Transport, Green Infrastructure, and Heritage and the Historic Environment; and*

- *Support other proposals which lead to a reduction in carbon footprint including the retrofitting of existing homes and businesses, including local initiatives based on carbon off-setting via allowable solution*

2.3 Design For Gravesham - Design Code Supplementary Planning Document - May 2024

Design principle 6.13 - Energy Efficiency and Resilience has been determined to be the relevant design principle for this statement.

2.4 Design principle 6.13 - Energy Efficiency and Resilience

a. *New developments must create buildings and spaces that reduce their environmental burden and the long term financial burden for occupiers.*

b. *Applicants must demonstrate they have maximised energy efficiency of their proposals by using aspect, orientation and design elements to help reduce heating and lighting needs.*

c. *Applicants must consider the effects of climate change specifying robust landscape, materials and infrastructure that can help the building future climate adaptation, thereby making development climate resilient.*

d. *Developments must adopt a "fabric first" approach to reduce their energy demand before integrating renewable alternatives.*

e. *Proposals should take into account Gravesham's Climate Change Strategy.*

f. *Applicants should create flexible and adaptable buildings using construction methods that could enable future alterations.*

g. *Applicants should demonstrate they have maximised water efficiency of their proposals through water efficient infrastructure, harvesting of rainwater and re-use of grey water in line with current Building Regulations.*

h. *Proposals should introduce low and zero carbon decentralised energy generation infrastructure where viable. Where it is currently unviable, the introduction of infrastructure to aid future installation should be considered.*

i. *Applicants should demonstrate they have integrated or considered the sustainability of the construction process and off-site construction methods.*

3.0 Policy Response

3.1 Energy Efficiency and Carbon Emissions

3.1.1 Energy Efficiency

The nature of the application for the development on the land off Wrotham Road, Meopham is limited to outline at this stage, as a result, aspects of the design and service strategies have not been established. Despite this, there is an emphasis from the project team to highlight the importance of an energy efficient strategy, which demonstrates a reduction in the overall carbon emissions associated with the day-to-day operation.

Table 1 demonstrates how a current outline specification of the development at Wrotham Road, Meopham would compare to the limiting values and minimum efficiencies allowed within Part L 2022:

Table 1: Proposed Specification

Building Element	Limiting Part L 2022 Specification	Outline Part L 2022 Specification
External Walls U-Value	0.26	0.19
Roof U-Value	0.16	0.11
Ground Floor U-Value	0.18	0.12
Window U-Value	1.60	1.20
Party Wall U-Value	0.20	0.00
Pressure Test	8.00	5.00
Lighting Lumens	75 lm/w	80 lm/w

The development will be required to adopt a 'fabric first' approach to specification, and as detailed above, the proposed U-Values will demonstrate an improvement on the limiting requirements under Part L.

All of the main building elements will be designed to provide a thermally efficient building envelope that achieves an improvement on the minimum requirements set out within Part L. Insulated walls, roof, floors and openings will provide a comfortable environment within each dwelling and reduce the buildings' reliance on the main heating system in operation.

Intelligent construction methods and a high quality of specification will be utilised in the design. The use of high-performance thermal bridge details and uplifted air permeability targets will ensure that thermal performance is enhanced by minimising heat and energy losses through thermal bridges and air gaps.

The development at Wrotham Road, Meopham will comply with the Part S Building Regulations. This requires new homes and existing homes undergoing large renovations (of 10 more or dwellings) to have facilities for charging electric vehicles at each dwelling. Therefore, each dwelling will have at least one installed vehicle fast charging (7-22kW) EV charging point.

To summarise, all of the main building elements outlined in Table 1 have been outlined to provide a thermally efficient building envelope that achieves an improvement on the minimum requirements set out within Part L. These elements when combined with efficient mechanical and electrical services, achieve an improvement on the minimum requirements set out within Part L1A 2022 and ensure enhanced energy efficiency and reduce CO_2 emissions, thus mitigating the impacts of climate change. Due to this being an outline application, the proposed values may be subject to change, nevertheless compliance with the Part L will be maintained.

3.2 Low Carbon Heat Networks

3.2.1 Combined Heat and Power and District Heating

An exercise has been completed reviewing the potential for the proposed development at Wrotham Road, Meopham, to connect to an existing low carbon heat network. The Department for Energy Security & Net Zero Heat Networks Planning Database has been reviewed to confirm the closest possible connection point.

As demonstrated in Figure 1, the closest connection point is the *High Street – 17 Flats and Building Hub, Connection* approximately 12.5 km from the proposed site location. Due to the extended distance between these two points, it is considered that this would not be a feasible application.

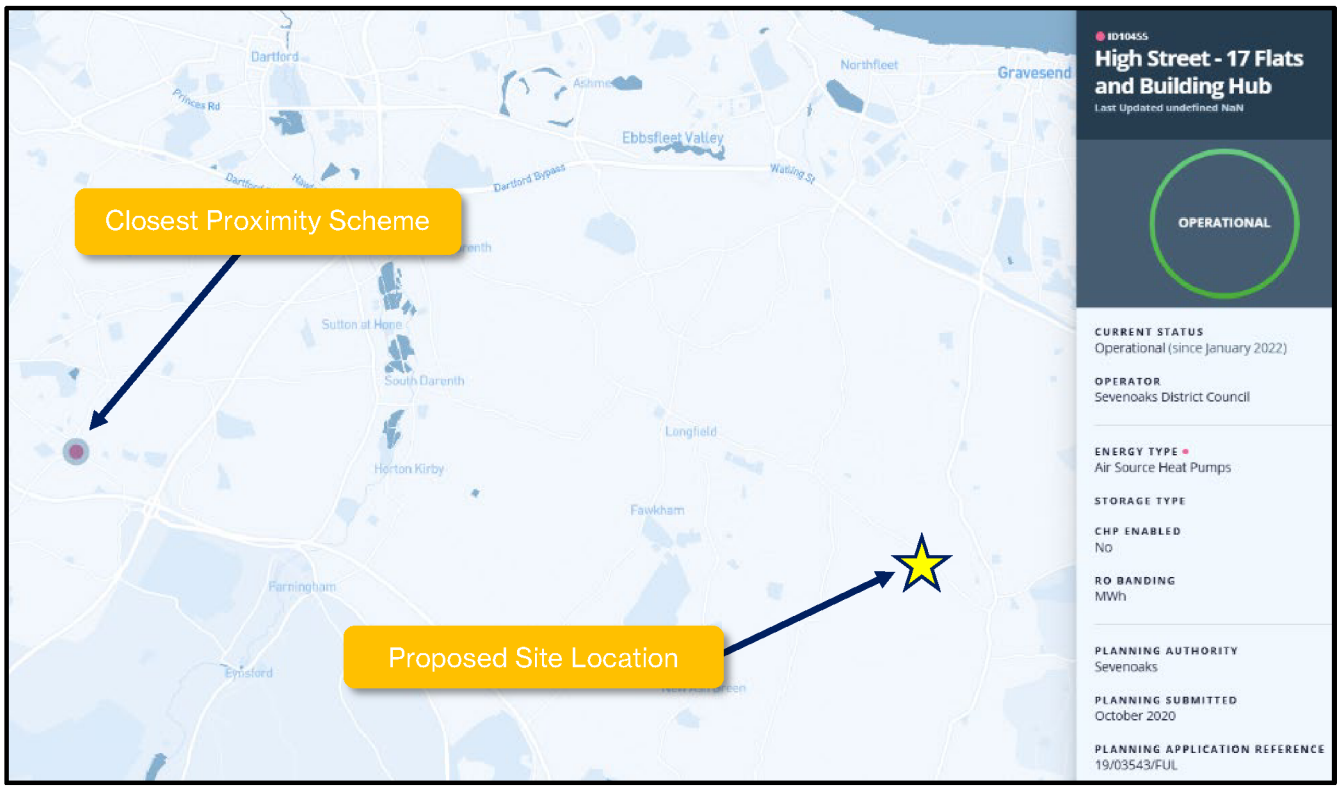


Figure 1 – Department for Energy Security & Net Zero Heat Networks Planning Database - https://data.barbour-abi.com/smart-map/repd/desnz/?type=heat_network

At the point of reserved matters, it is encouraged a further review of available district heating networks be completed, to understand if there are any new connection opportunities available at that time. These are to be evaluated in terms of viability for the scheme.

Whilst the application will be submitted in outline, a review of Combined Heat and Power (CHP) systems has also been completed for viability. CHP systems are best suited to applications whereby there is a constant and continuous demand for heating and other electrical means. The nature of the development is residential, as a result there will be intermittent loads and demands for power, with requirements slowing down during the overnight hours. Heating demands will also fluctuate seasonally, with those requirements reducing in summer months and peaking in winter months.

The nature of the site and proposed dwellings render it an unlikely candidate for a CHP system as a result under current proposals.

3.3 Renewable Energy Sources

The developer's preferred strategy is to promote the first element in the Council's energy hierarchy and reduce the development's carbon footprint by use of efficient fabric. A review of appropriate renewable technologies will be completed at the next stage of design, to understand initially which technologies would be feasible to the site location, and the viability of incorporating them into the proposals

3.4 Water Efficiency

In order for the development to meet the Policy CS18 requirements relating to water efficiency, it is proposed that planned water usage does not exceed the building regulations upper target of 105 Litres/person/day. The development at Wrotham Road, Meopham, will incorporate efficient, water saving sanitaryware to meet this goal. Where this is not possible, flow restrictors will be installed to limit water use of sanitaryware items.

A representative specification is demonstrated in Table 2 below, whilst the final flow rates of individual sanitaryware items may change as detailed design progresses, water conservation will continue to be prioritised. The Part G Calculator giving a more detailed breakdown of flow rates is available in Appendix 2.

Table 2: Proposed Sanitaryware Specification Flow Rates

Component	Water Usage
WCs	4.5 Litres (Full Flush Volume), 3 Litres (Part Flush Volume)
Bath	150 Litres
Showers	9 Litres/Minute
Wash-hand basin taps	5 Litres/Minute
Kitchen taps	5 Litres/Minute
Washing Machine	5 Litres / kg
Dishwasher	1.19 Litres / Place Setting
Calculated Use	**104.6 Litres/person/day**

This proposed specification provides a calculated estimated water use of 104.6 Litres/person/day. This is below the target requirement of a maximum 105 Litres/person/day.

3.5 Sustainable Construction

The development at Wrotham Road, Meopham will be planned, designed and built in a way that and adapts to changing climate conditions

3.5.1 Passive Heating and Solar Gains

Passive solar design enhances the energy and environmental performance of a building. The development at Wrotham Road, Meopham will be designed to have good access to solar radiation and daylight.

As this application is submitted in outline, there is limited design aspects completed at this stage. The proposed dwellings however will be considered so are oriented in a way they benefit from a passive solar heating. The location confirms that any resultant dwellings will not be significantly shaded by surrounding buildings and it will be ensured in design that there will be sufficient space between the buildings so that overshadowing will not be an issue, allowing potential for solar gain.

It is envisaged a traditional form of construction will be adopted, as such, there will be presence of high thermal mass and good insulation levels in this proposed scheme, providing an effective medium for managing solar gains, both having the ability to both hold heat and cool.

A high level of thermal mass further means dwellings can absorb excess heat throughout the day, keeping the surrounding area cooler, and then slowly release and re-radiate the stored heat as the temperature drops. This prevents rooms from becoming uncomfortably hot in summer and stores warmth in winter.

This outline application proposes to include several large areas of open space as shown in the proposed parameter plan. It is also envisaged the proposed dwellings will have associated gardens providing green amenity space for residents. Green infrastructure has the potential to reduce the risk of heat island effect, acting as a heat soak for the scheme.

Although an outline application, it is currently expected that compliance will be achieved through a combination of passive measures and ventilation to ensure Part O compliance.

3.5.2 Material Selection

The new development will strive to incorporate sustainable design into the dwellings. Material selection will endeavour to show preference to suppliers who operate responsible sourcing practices and have current environmental management certificates. Examples including FSC/PEFC certified timber products will be utilised, this ensures all products have been obtained from sustainable and legal sources.

Whilst specific materials will be determined at a later stage of the project, consideration will be given to prioritising a reduction in carbon emissions through the procurement strategy. Namely, the use of recycled materials or low carbon options will be considered where feasible to the construction efforts, rather than defaulting to wholly new materials at each opportunity. Furthermore, where aggregates are to be used, the procurement of secondary aggregates will be assessed in terms of viability to the design.

Where possible, the development will look to source building materials from local suppliers. Through this approach, delivery materials will be transported lesser distance, reducing the associated CO_2 emissions and fuel use of delivery loads. Similarly, where feasible contractors and site personnel required will be selected who are local to the site to aid the construction efforts. This again will reduce the associated CO_2 emissions of travel, in addition to supporting the local economy.

3.5.3 Waste and Recycling

In efforts to reduce waste throughout the construction process, as part of the design development, the resultant design team will be required to implement a number of measures to reduce or eliminate potential waste.

The contractor will be required to have an effective site waste management system adopting waste hierarchy principles of reduce, reuse, or recycle.

All waste will be required to be handled by a licensed waste contractor who will segregate and process waste produced. Such waste will be separated into key waste groups and recycled at a waste processing plant to be refined into new products or reused in other projects where they cannot be reformed. A target will be set for the contractor in terms of reduction of waste that is taken to landfill that will be an improvement on standard market practices, and they will be expected to demonstrate compliance with this. Site hoarding or materials where safe and appropriate will be transported from other sites for reuse.

The design of the dwellings will look to incorporate recycling facilities for residents further encouraging the principles of recycling. Gravesham Borough Council operate an alternative collection for refuse waste & recycling waste, allowing for residents to segregate waste types in a more sustainable manner. To enable efficient segregation of operational waste for their residents, sufficient spacings and access will be provided to enable waste bins to be collected in line with Gravesham Borough Council waste collection regime. The potential for on-site composting facilities for use on the garden areas will also be explored, subject to other requirements and considerations.

3.6 Embodied Carbon

It will be ensured that the resultant developer will be committed to measuring and reducing the embodied carbon emissions associated with this development. The design for the scheme will be required to take a holistic approach to ensure sources of both embodied and operational carbon are minimised. For example, efficient heating and ventilation systems allow for lower operational carbon emissions while avoiding a substantial increase in embodied carbon.

Reducing consumption is the most effective tier of the waste hierarchy and features highly in tiered approaches to reducing embodied carbon. The top tiers of such hierarchies, retrofitting existing buildings and reusing existing materials, are not possible at this site since there are no extant structures present.

In terms of design circularity, the dwellings will be designed for longevity. Demand for housing is highly likely to remain high for the foreseeable future, especially in the context of an increasing population. It is therefore reasonable that the circularity principle most closely followed should be building for longevity. The proposed development will be designed to stand for well in excess of 60 years which is the industry adopted norm. Through robust materials and a design aesthetic that holds broad appeal, the buildings should stand the test of time and serve the local community for a long time, thereby postponing end-of-life emissions and avoiding emissions that would occur as a result of redevelopment.

It will be ensured that the resultant developer will adopt a local procurement policy for which compliance demands that construction materials are procured from manufacturers and suppliers locally where possible. This removes the requirement for long distance journeys made by delivery drivers and the associated carbon emissions.

In summary, the proposed scheme will look to have a lower emissions intensity than many similar developments. This will be achieved by adopting good practice in design and ensuring a holistic approach to minimising sources of both operational and embodied carbon emissions.

4.0 Conclusion

This statement has reviewed the proposed development on the land off Wrotham Road, Meopham, an outline application for the erection of up to 350 residential dwellings, public open space and associated works. Approval is sought for the principal means of vehicular access from Wrotham Road and all other matters are reserved

This statement has demonstrated how the proposed scheme will fulfil the requirements of the existing planning policies and the requirements of the relevant Gravesham Borough Council documents.

Gravesham Local Plan Core Strategy Adopted September 2014

- Policy CS18: Climate Change

Design For Gravesham - Design Code Supplementary Planning Document - May 2024

- Design principle 6.13 - Energy efficiency and resilience

The statement has highlighted that the scheme intends to adopt a good thermal envelope to minimise heat loss, as well as efficient heating and lighting systems, which will drive energy efficiency in the proposed dwellings. This is in line with the Policy CS18 objective of promoting development which minimises carbon emissions and greenhouse gas emissions.

There will be an underlying commitment to operating under sustainable construction practices. The resultant developer will demonstrate this through prioritising the selection of sustainably sourced materials, minimising waste and promoting recycling throughout construction and into operation, and reducing embodied carbon by adopting a circular approach throughout design and construction.

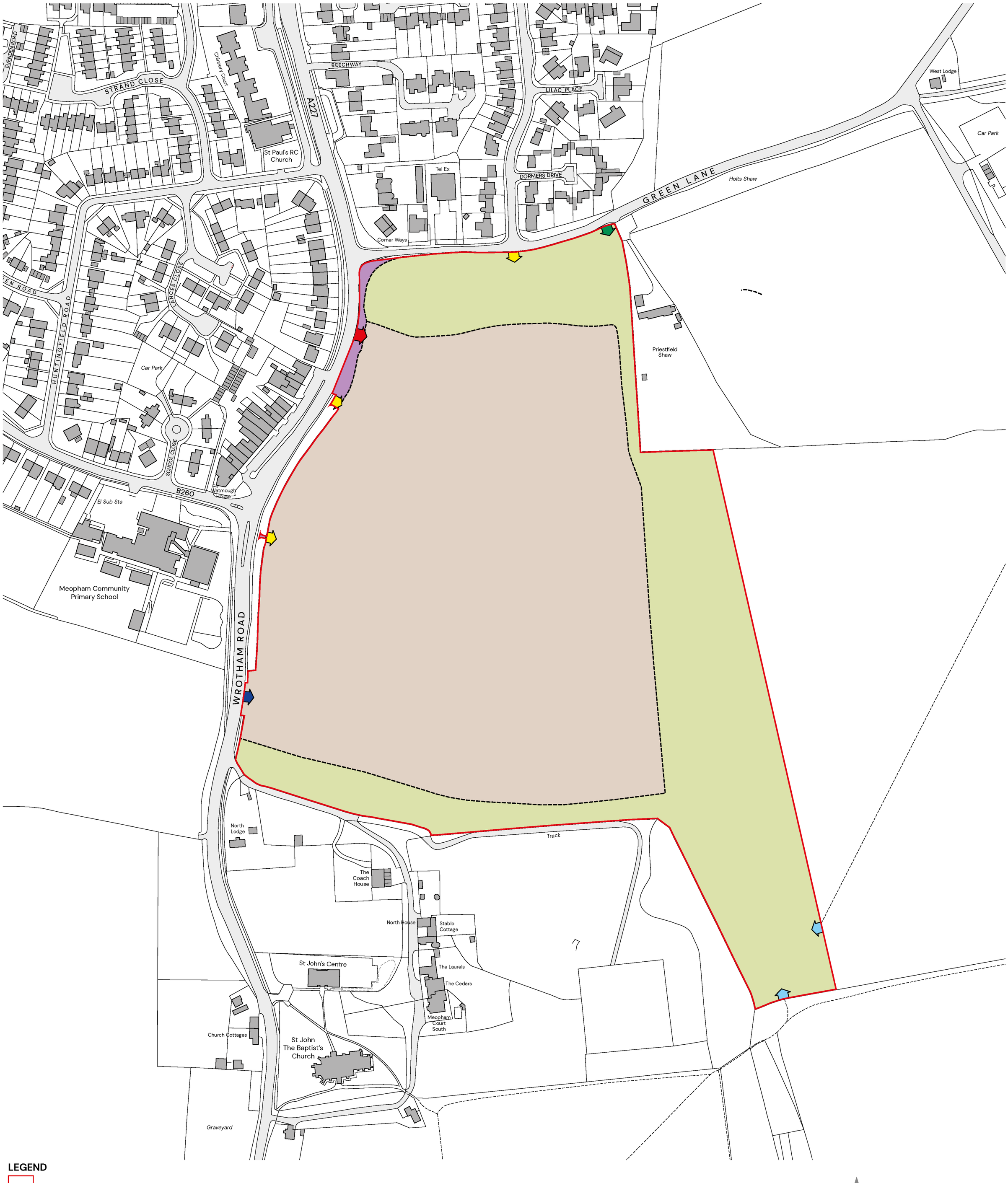
A proposed compliant sanitaryware specification of 104.6 Litres/person/day has been provided. This is an improvement over the Building Regulations upper requirement of 105 Litres/person/day specified in Policy CS18. The client's commitments with regards to Sustainable Construction have also been detailed.

An anticipated compliant strategy has been put forward at this stage and it will be ensured the policy requirements listed will be maintained, it may however be subject to change following detailed design development, and any constraints that arise related to site conditions.

Appendix 1

Proposed Parameter Plan

Focus Consultants 2010 LLP, Focus House, Millennium Way West, Phoenix Business Park, Nottingham NG8 6AS T. 0115 976 5050



LEGEND

Site boundary

LAND USE PARAMETERS

- Indicative area of land required for the proposed access, not within the residential land use (subject to detailed design)
- Proposed residential development (Use Class C3) (including roads, footpaths, private drives, amenity and incidental open space and other associated infrastructure, subject to detailed design)
- Proposed open space (including amenity green space, children's play provision, allotments, orchard, landscaping, footpaths, drainage and other associated infrastructure, subject to detailed design)

ACCESS PARAMETERS

- Proposed access/egress for all modes (subject to detailed design)
- Potential access/egress for cyclists and pedestrians only (subject to detailed design)
- Potential access/egress for pedestrians only (subject to detailed design)
- Existing public right of way access retained
- Potential emergency access for emergency vehicles and access/egress for cyclists and pedestrians (subject to detailed design)

Note: All features and areas are subject to detailed design and to a tolerance of 10m.

N

0 100m

REV C: Amended access and red line boundary	19.09.2025 CM
REV B: Amended land use areas	04.09.2025 CM
REV A: Amended access and land use areas	03.09.2025 CM
FIRST ISSUE: For client comment	27.08.2025 CM

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WROTHAM ROAD, MEOPHAM | PARAMETER PLAN

TEAM/DRAWN BY: CM | APPROVED BY: JW | DATE: 27/08/2025 | SCALE: 1:2000 @ A2 | DRAWING REF: P25-0485_DE_1006 | SHEET: 1 | REV: C | CLIENT: RICHBOROUGH

Appendix 2

Part G Water Calculations

Focus Consultants 2010 LLP, Focus House, Millennium Way West, Phoenix Business Park, Nottingham NG8 6AS T. 0115 976 5050

breglobal

Job no:	R4591
Date:	September 2025
Assessor name:	Meridyth Rogerson
Registration no:	
Development name:	Land off Wrotham Road, Meopham

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:																				
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	4.5	6.57		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)	5	9.48		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	150	16.50		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Shower	Flow rate (litres / minute)	9	39.33		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)	8	13.88		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Has a washing machine been specified?		Yes		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:	
Washing Machine	Litres / kg	5	10.50		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Has a dishwasher been specified?		Yes		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:	
Dishwasher	Litres / place setting	1.19	4.28		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		109.4		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		99.6		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		104.6		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
	17.K Compliance?		Yes		-		-		-		-		-		-		-		-		-