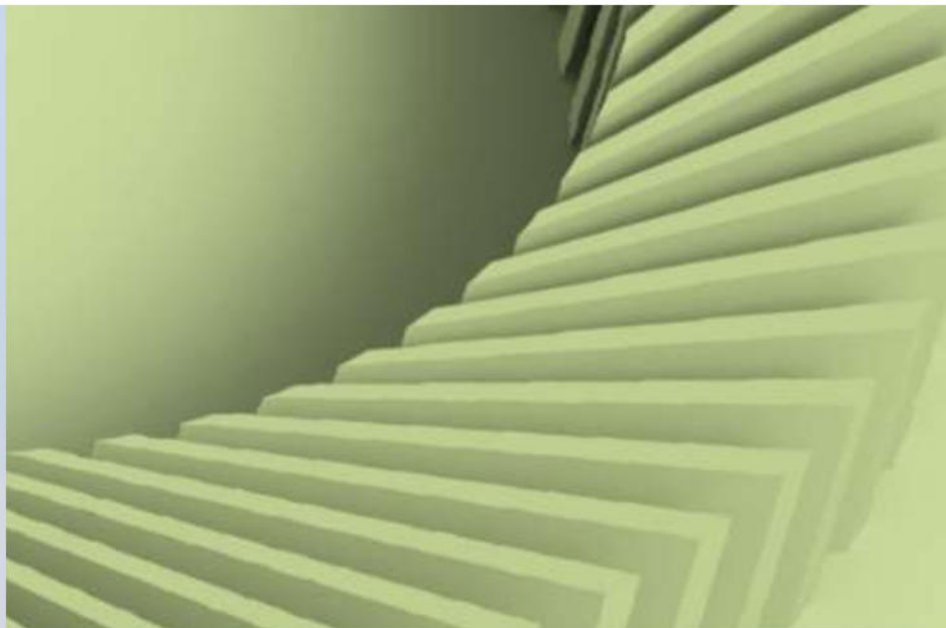


Planning Issues Ltd



The Windmill Inn & 34 Mill Lane, Rustington Energy Statement

July 2024



focus-consultants.com

Create. Deliver. Assess.

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Project: The Windmill Inn & 34 Mill Lane, Rustington

Document Title: Energy and Sustainability Statement

Date: July 2024

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- Appendix C - SAP/SBEM Calculations (Available on request due to size)

1.0 Introduction

1.1 Purpose of the Report

Instructions were received from Planning Issues Ltd to produce an Energy and Sustainability Statement for the proposed development at The Windmill Inn, Mill Lane, Rustington, BN16 3JN. This report has been produced to support the planning application to be submitted for the proposed development, which is situated within the boundaries of Arun District Council.

This statement provides a response to the relevant Arun District Council documents and policies:

- ***Arun Local Plan 2011-2031 (July 2018)***
- ***Arun District Design Guide Supplementary Planning Document (February 2024)***

1.2 Site and Building Description

The development will be located at The Windmill Inn and 34 Mill Lane, Rustington, BN16 3JN. The application seeks approval for the construction of a retirement living complex consisting of 28 apartment dwellings (a mix of 1- & 2-bed), as well as 3 no cottages. Associated parking spaces, landscaping and communal areas are also included within the application. The communal areas comprise circulation spaces, coffee bar, and an owner's lounge. A proposed site layout has been included in Appendix 1.

1.3 Methodology

The proposed specifications, house type drawings and site plan were reviewed to gain a good understanding of the development; following this, sample SAP & representative SBEM calculations for all proposed house types and communal spaces have been completed to determine the As Designed performance of the development. The application will be considered under the Part L 2022 regulations; therefore, software has been used to conduct the above calculations.

An assessment has been completed to review the potential connection of the proposed development to an existing district heat network. Up to date map data has been provided by the Association of Decentralised Energy, to enable the suitability and distance in relation to the location of the proposed development from a district heating network be reviewed.

In relation to the Part G water requirements, a proposed sanitaryware specification has been assessed against the 110 litres/person/day limit outlined in the building regulations requirements.

2.0 Planning Policy

2.1 Arun Local Plan 2011 – 2031

Policy ECC SP1 Adapting to Climate Change

The Council will support development which is located and appropriately designed to adapt to impacts arising from climate change such as the increased probability of tidal and fluvial flooding; water stress; health impacts as a result of extreme temperatures and a decline in the quality of habitats and richness of biodiversity.

In order to achieve this, development must be designed to take account of the following issues:

- a. Location (in relation to flood risk and vulnerability to coastal erosion);*
- b. Water efficiency;*
- c. Shade, cooling, ventilation, solar gain;*
- d. Connectivity to the green infrastructure network;*
- e. Layout and massing;*
- f. Resilience of buildings and building materials to extreme weather events; and*
- g. Capacity of drainage systems and incorporation of Sustainable urban Drainage Systems (SuDS.)*

Policy ECC SP2 Energy and Climate Change Mitigation

All new residential and commercial development (including conversions, extensions and changes of use) will be expected to be energy efficient and to demonstrate how they will:

- a. Achieve energy efficiency measures that reflect the current standards applicable at the time of submission;*
- b. Use design and layout to promote energy efficiency; and*
- c. Incorporate decentralised, renewable and low carbon energy supply systems, for example small scale renewable energy systems such as solar panels.*

All major developments must produce 10% of the total predicted energy requirements from renewable or low carbon energy generation on site, unless it can be demonstrated that this is unviable. Energy efficiency measures will be taken into consideration when the total predicted energy requirements are calculated. The Council will consider 'allowable solutions' where it is clearly demonstrated that the provision of on site renewable or low carbon energy generation is unviable or not feasible.

Where planning permission is required to retrofit energy efficiency measures into existing development, schemes will be permitted, subject to the Design and Built Heritage policies.

In assessing the achievement of these standards the Council will consider:

- Site constraints;*
- Technical viability;*
- Financial viability; and*
- Delivery of additional benefits.*

Policy W DM1 Water Supply and Quality

To ensure that all new development of two dwellings or more are water efficient and reduce pressure on water abstraction sites, it must include measures that meet the optional standards of 110 l/person/da.

2.2 Arun Design Guide SPD – Climate Change & Sustainability

K.01 Energy & Carbon

Energy & Carbon - Make sure the scheme:

- *Sets targets for energy and carbon reductions beyond the relevant Part L Building Regulations*
- *Demonstrates consideration of embodied carbon (emissions from the manufacture, transport and construction of building materials, together with end of life emissions)*
- *Incorporates passive solar design measures such as avoiding single aspects, including south facing windows on habitable rooms, minimising north-facing glazing, using roof lights and sunpipes and providing shading to south facing windows through tree cover*
- *Uses heat recovery systems wherever mechanical ventilation is installed (MVHR).*
- *Considers the ventilation strategy alongside proposed air tightness levels, to ensure buildings are not left susceptible to mould growth. This may include hydrothermal modelling.*

K.02 Water & Material Management

Water & Materials - Make sure that the scheme:

- *Applies the waste and water hierarchies.*
- *Re-uses and/or recycles materials arising from demolition and remediation works.*
- *Provides adequate space and opportunities for managing waste on-site where viable. Waste compactors and de watering systems can help reduce waste volumes.*
- *Where possible targets potable water consumption of <110l/person/day through the incorporation of high efficiency fixtures and fittings and grey and rainwater harvesting systems to reduce demand on local water supplies.*
- *Includes infrastructure for monitoring water consumption and leak detection. Leak detection will also reduce risk of localised flooding. See K.04 for further guidance.*

3.0 Policy Response

3.1 Energy Efficiency & Sustainable Construction

3.1.1 Proposed Fabric Specification

In efforts to reduce the overall carbon emissions associated with the development and to maximise the energy efficiency, the developer has a robust 'fabric first' approach to the build specification, which allows it to achieve compliance with all metrics under the adopted Approved Document Part L 2022.

This will be achieved in this project through building fabric improvements with an uplift on the minimum requirements of Approved Document Part L1A 2022, and also specification of efficient mechanical and electrical services, including a number of 'add-on' measures to improve efficiency and performance.

Fabric Energy Efficiency is a measure of the efficiency of the building fabric, the key areas being building fabric U-values, thermal bridging, air permeability, thermal mass and features which affect lighting and solar gains. A higher fabric energy efficiency means that the building will require less energy to heat and cool thus reducing the energy demand of the property and the CO₂ released.

Table 1 below demonstrates how the specification of the development at The Windmill Inn and 34 Mill Lane compares to the limiting values and minimum efficiencies allowed within Part L 2022.

Building Element	Limiting Part L 2022 Specification	Proposed Specification Part L
External Walls U-Value	0.26	0.17
Plane Roof U-Value	0.16	0.11
Sloped Roof U-Value	0.16	0.16
Ground Floor U-Value	0.18	0.12
Window U-Value	1.60	0.80
Party Wall U-Value	0.20	0.00
Heating Efficiency	100%	100%
Pressure Test	8.00	5.00
Lighting Lumens	75 lm/w	80 lm/w

The development is proposed to adopt a 'fabric first' approach to the specification and as detailed above, the proposed U-Values are a significant uplift on the minimum requirements under Part L.

The build-up of external walls for the apartments is a fully filled cavity that achieves a u-value of 0.17W/m²K.

With regards to the thermal envelope as a whole, well insulated cavity walls, roof, floors and openings provide a comfortable environment within the development and reduce the buildings' reliance on the main heating system. The high thermal mass, achieved through the use of dense blocks to the inner face of the external wall, will be key to temperature regulation. The air permeability target is 5.00 m³/(h.m²), again providing a large improvement over the Notional Building target.

Triple Glazed windows are currently proposed for the scheme, which is a significant improvement over the requirements of ADL1 and is more in line with the proposed specification for the 2025 Future Homes Standard. This improved U-Value will provide benefit to the overall performance of the scheme, minimising heat loss through this construction element.

Intelligent construction methods are also utilised in the specification of this development. The use of bespoke calculated thermal bridge details and a relatively simple building form ensures that thermal performance is enhanced by minimising heat and energy losses through thermal bridges and air gaps.

3.1.2 – Proposed Mechanical and Electrical Services

In addition to the robust fabric specification as detailed above, the client is also proposing an efficient M&E strategy.

Space Heating is serviced through direct electric panel heaters which provide efficiencies of up to 100%. The use of an electric heating solution strategy also brings the client in line with what appears to be the Government's preferred direction of travel for domestic heating going forward and given the continuing decarbonisation of the grid, electricity can be seen as an increasingly low carbon solution.

A Mechanical Ventilation System (MEV) will be installed to all apartments. MEV is a whole house ventilation methodology which consists of a system of extract fans and background ventilators in bathrooms and kitchens. These are set to run constantly at low speeds to draw moisture-laden air out of the home. As such, they provide the same benefits as intermittent fans in wet rooms, but do so with a higher degree of efficiency, minimising the need for electricity use for ventilation.

Solar Photovoltaic panels will be provided to the suitable roof areas of the scheme. The installation of PV panels helps to reduce the CO₂ emissions from the development, as electricity generated from solar panels is considered to be an on-site zero carbon renewable energy and doesn't release any harmful carbon dioxide or other pollutants.

An EVCP control unit is used to monitor electricity use within the building and assists with distribution of the solar photovoltaic (PV) output around the building and to elements such as Electric Vehicle (EV) charging points. Each apartment also benefits from its own individual smart meter.

3.2 Fabric Energy Efficiency

Table 2 below demonstrates the development's approximate total building fabric energy efficiency based on the representative domestic building types modelled.

Table 2: Part L 2022 Fabric Efficiency Breakdown (SAP 10.2)	
Domestic	Units (kWh/year)
Target Fabric Energy Efficiency (TFEE)	48,468.71
Dwelling Fabric Energy Efficiency (DFEE)	44,649.59
Percentage Reduction (%)	7.88%

As a result of the sample SAP outputs for the development, Table 2 shows the total Target Fabric Energy Efficiency (TFEE) of the development to be 48,468.71 kWh/yr. The total Predicted Dwelling Fabric Energy Efficiency (DFEE) is demonstrated to be an improvement against this amount, currently modelled to achieve 44,649.59 kWh/yr.

Overall, this is an improvement in fabric energy efficiency, equating approximately to a 7.88% reduction against the notional amount. This highlights the design specification performance of the development being an uplift to Building Regulations requirements.

3.3 Carbon Emissions and Energy Breakdown

3.3.1 Proposed Carbon Emissions

To understand the overall approximate carbon performance of the development, SAP and representative SBEM calculations have been undertaken. The initial calculations have been undertaken on a sample of the proposed dwellings at the development. Software outputs of the calculations completed can be made available on request.

Table 3 demonstrates the development's total approximate breakdown of carbon emissions based on the modelling outcomes.

Table 3: Part L 2022 Carbon Emissions Breakdown	
Domestic	Carbon Emissions (kgCO ₂ /year)
Target Emission Rate (TER)	19,861.25
Dwelling Emission Rate (DER)	8,840.11
Non-Domestic	Carbon Emissions (kgCO ₂ /year)
Target Emission Rate (TER)	3,031.45
Building Emission Rate (BER)	3,022.73
Total Reduction	11,029.86
Percentage Reduction (%)	48.18%

As a result of the sample SAP and representative SBEM outputs for the development, Table 3 shows the Target CO₂ emissions (TER) of the development to be 22,892.70 kg/CO₂/yr. The Predicted Carbon Emissions (DER) are demonstrated to be a substantial improvement against this amount, currently modelled to achieve 11,862.84 kg/CO₂/yr.

Overall, this is an 11,029.86 kg/CO₂/yr reduction in carbon emissions, approximately 48.18% reduction against the notional amount. This highlights the design specification performance of the development being a significant improvement above Building Regulations requirements.

3.3.2 Primary Energy

Similarly, Table 4 below demonstrates the developments total target and predicated primary energy rating.

Table 4: Part L 2022 Primary Energy Breakdown (SAP 10.2)	
Domestic	Units (kWh/year)
Target Primary Energy Rating (TPER)	104,521.36
Dwelling Primary Energy Rating (DPER)	103,255.55
Percentage Reduction (%)	1.21%

As a result of the sample SAP outputs for the development, Table 4 shows the total Target Primary Energy Rating (TER) of the development to be 104,521.36 kwh/yr. The total predicted Dwelling Primary Energy Rate (DPER) is demonstrated to be an improvement against this amount, currently modelled to achieve 103,255.55 kwh/yr, equating approximately to a 1.21% reduction against the notional amount. This highlights the design specification performance of the development being an uplift to Building Regulations requirements.

3.4 Renewable Energy

3.4.1 Photovoltaics

Photovoltaic panels (PV) convert solar radiation into direct current electricity. In principle, they are an ideal source of renewable energy as they harness the most abundant source of energy on the Earth, the sun, and they produce electricity, which is the most useful form of energy.

PVs are silent in operation, have no moving parts and have a long life with low maintenance levels. PV systems can be connected to the grid or battery arrays in remote locations. Grid connected systems consist of PV arrays connected to the grid through a charge controller and an inverter. PV cells are more efficient at lower temperatures so good ventilation should be allowed around the PV modules where possible.

As part of the design proposals, and in accordance with *Policy ECC SP2 Energy and climate change mitigation*, the development at The Windmill Inn and 34 Mill Lane will include a Solar PV array to contribute to total energy demand and reduce CO₂ emissions in operation. This will be for both the apartment block as well as the 3no cottages.

Based on the SAP calculations, an output of approximately 41,986.94 kwh/year is required to ensure Part L compliance, and to achieve the required minimum 10% energy use from renewable sources.

Table 5: Energy Generation from the Supply of Renewable Energy	
Energy Generation from Renewable Energy	Units (kwh/yr)
Photovoltaics	41,986.94
Total Energy from Renewable Energy	41,986.94
Total Predicted Energy Consumption – Domestic	69,768.69
Total Predicted Energy Consumption – Non-Domestic	31,461.66
Percentage of Predicted Energy Consumption to be Supplied by Renewable Sources	41.48%

As Table 5 above demonstrates, the total energy generation for the scheme is approximately 101,230.35 kwh/year, with PV supplying approximately 41.48% of the energy consumption. This surpasses the minimum 10% requirement, in adherence with *Policy ECC SP2*.

The client will request their chosen PV supplier to propose a suitably sized PV array in order to meet the output requirement, which they are committed to applying to the scheme, and the PV figure will be updated where required as the scheme design develops.

3.5 District Heating Network Evaluation

An exercise has been completed reviewing the potential for the proposed development at the Windmill Inn and 34 Mill Lane to connect to an existing district heat network. The Association for Decentralised Energy's (ADE) District Heating connection map has been reviewed to confirm the closest possible connection point.

As demonstrated in Figure 1 below, the closest connection point is the *Graylingwell Park District Heating Scheme*, approximately 19 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.

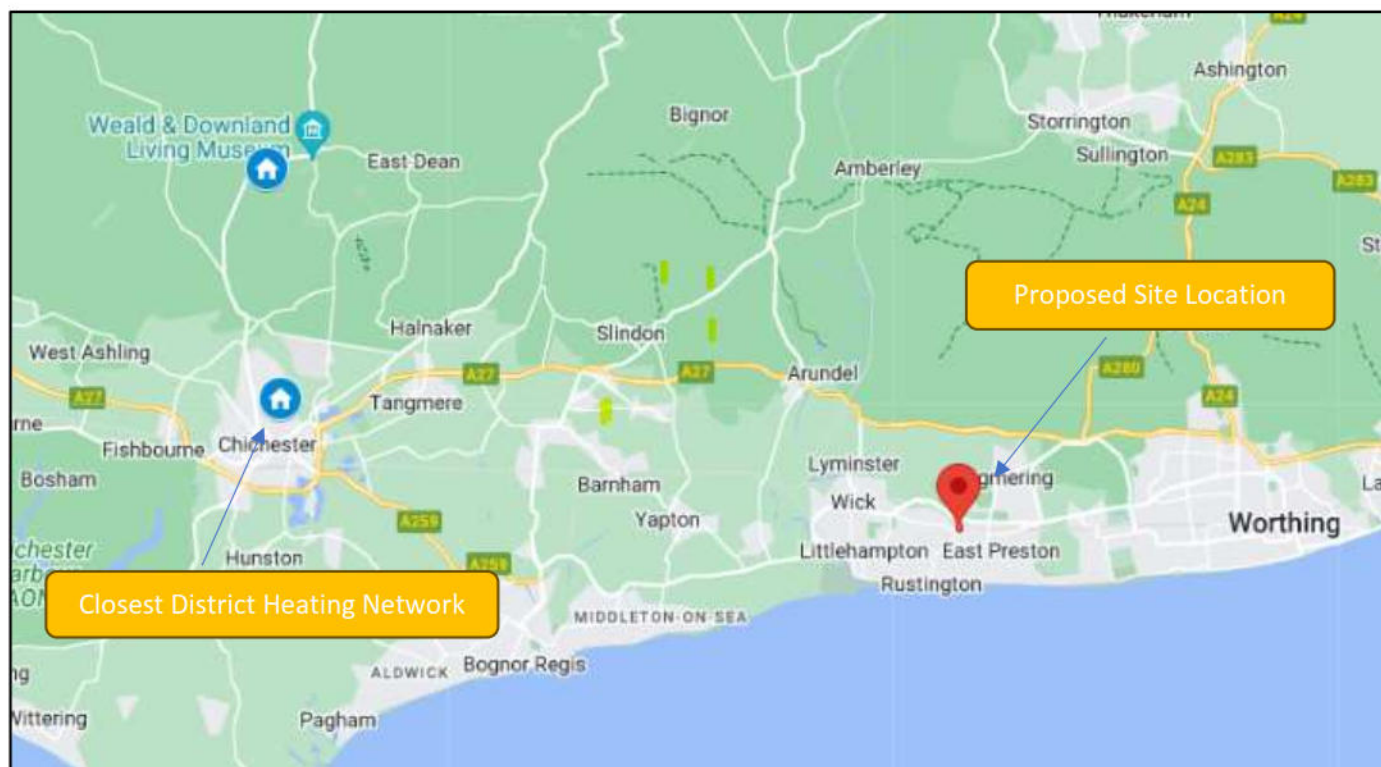


Figure 1 – Association of Decentralised Energy - www.theade.co.uk

3.6 Building Orientation & Solar Gains

The vast majority of apartments benefit from orientations which will allow them to receive solar gain from the sun later in the day, encouraging a passive form of heating.

The development will not be significantly shaded by surrounding buildings and there is sufficient space around the building so that overshadowing will not be an issue and there will be significant potential for solar gain.

The use of high thermal mass and good insulation levels in this proposed scheme provides an effective medium for managing solar gains, both having the ability to both hold heat and cool. These materials have high levels of thermal mass meaning they 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.

The proposed scheme will be assessed against the new Part O Overheating Building Regulations. The apartments will be assessed using the Dynamic Thermal Modelling method, which follows the CIBSE TM59 methodology.

It is currently expected that compliance will be achieved through a combination of passive measures and mechanical ventilation, and the client is currently in the process of developing a rigorous strategy to ensure Part O Compliance. Where further measures are required to ensure Part O Compliance, these will be installed in full by the client.

3.7 Waste & Materials

3.7.1 Material Selection

The new development at The Windmill Inn and 34 Mill Lane will strive to incorporate sustainable design into the building. 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.

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 CO₂ emissions of travel, in addition to supporting the local economy.

The development design is to standard material dimensions to avoid waste generation. This reduces waste not only at the manufacturing stage, but also during construction as it reduces the need to re-size materials on site. In addition, the use of standardised materials increases the ease of deconstruction and improves the likelihood that the materials will be reused, in the eventuality that the site is redeveloped in the future.

3.7.2 Waste and Recycling

In efforts to reduce waste throughout the construction process, as part of the design development, the design team have implemented a number of measures to 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 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 a significant 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 looks to incorporate recycling facilities for residents further encouraging the principles of recycling. Arun District 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 dwellings to enable waste bins to be collected in line with Arun District Council waste collection regime. The potential for on-site composting facilities for use on the communal garden areas will also be explored, subject to other requirements and considerations.

3.8 Water Use Efficiency

In order for the development to not exceed the building regulations target of 110 Litres/person/day, the development at The Windmill Inn and 34 Mill Lane will incorporate efficient, water saving sanitaryware. Where this is not possible, flow restrictors will be installed to limit water use of sanitaryware items.

Representative specifications are shown below in Tables 6 and 7 below. Based on these specifications, the 1 bed apartments at the site will achieve a predicted water consumption of 98.20 litres/person/day and the 2 bed apartments and cottages will achieve a predicted water consumption of 104.70 litres/person/day.

Table 6: Proposed Sanitaryware Specification Flow Rates (1 Bed Flats)

Component	Water Usage
WC's	4.5 Litres (Full Flush Volume), 3 Litres (Part Flush Volume)
Showers	8 Litres/Minute
Wash-hand basin taps	4 Litres/Minute
Kitchen taps	5 Litres/Minute
Bath	N/A
Washing Machine	8.17 Litres/kg (Default Figures)
Dishwasher	1.25 Litres/Place Setting (Default Figures)

Table 7: Proposed Sanitaryware Specification Flow Rates (2 Bed Flats and Cottages)

Component	Water Usage
WC's	4.5 Litres (Full Flush Volume), 3 Litres (Part Flush Volume)
Showers	8 Litres/Minute
Wash-hand basin taps	4 Litres/Minute
Kitchen taps	5 Litres/Minute
Bath	155 Litres Capacity
Washing Machine	8.17 Litres/kg (Default Figures)
Dishwasher	1.25 Litres/Place Setting (Default Figures)

Both specifications provide expected flow rates in line with the policy requirement of maximising opportunities for the use of water efficiency measures

Whilst the final flow rates of individual sanitaryware items may change as detailed design progresses, performance sufficient to comply with the policy will be maintained. A full breakdown of calculations is available in Appendix 2.

4.0 Conclusion

This statement has reviewed the proposed development at The Windmill Inn and 34 Mill Lane, a retirement living complex consisting of 28no apartment dwellings (a mix of 1- & 2-bed), as well as 3no cottages, and has provided a response to the relevant Arun District Council documents and policies:

Arun Local Plan 2011-2031 (July 2018).

Arun District Design Guide Supplementary Planning Document (February 2024).

The development's approximate average building fabric energy efficiency, based on the representative domestic building types modelled, shows the development's Target Fabric Energy Efficiency (TFEE) to be 48,468.71 kWh/yr. The Predicted Dwelling Fabric Energy Efficiency (DFEE) is shown to be an improvement over this amount, which is currently estimated to be 44,649.59 kWh/yr. Equating approximately to a 7.88% reduction against the notional amount.

Table 3 shows the Target CO₂ emissions (TER) of the development to be 22,892.70 kg/CO₂/yr. The Predicted Carbon Emissions (DER) are demonstrated to be a substantial improvement against this amount, currently modelled to achieve 11,862.84 kg/CO₂/yr.

Overall, this is a 11,029.86 kg/CO₂/yr reduction in carbon emissions, approximately 48.18% reduction against the notional amount. This highlights the design specification performance of the development being an improvement above Building Regulations requirements.

Similarly, Table 4 shows the total Target Primary Energy Rating (TER) of the development to be 104,521.36 kwh/yr. The total predicted Dwelling Primary Energy Rate (DPER) is demonstrated to be a substantial improvement against this amount, currently modelled to achieve 103,255.55 kwh/yr, equating approximately to a 1.21% reduction against the notional amount. This highlights the design specification performance of the development being an uplift to Building Regulations requirements.

The statement has highlighted that the scheme currently proposes to utilise a robust, well insulated thermal envelope to minimise heat loss, as well as efficient heating and lighting systems, which will drive energy efficiency in the building. Solar PV panels will be provided to the suitable roof areas of the scheme, both for the apartment block and cottages. It is currently proposed that arrays with a total predicted output of 41,986.94 kwh/year will be applied to the scheme. With total energy consumption predicted to be approximately 101,230.35 kwh/year, PV is accounting for approximately 41.48% of energy consumption. This goes beyond the minimum 10% requirement set by *Policy ECC SP2 Energy and climate change mitigation*.

Two proposed sanitaryware specifications have been detailed, both of which provide a noted improvement over the Building Regulations requirement of 110 Litres/per person/per day. The client's commitments and strategies with regards to solar gain and overheating mitigation have also been detailed.

Whilst the proposed construction specification, use of renewable technologies and water sanitaryware flow rates are the preferred specification at this present time, it may be subject to change as detailed design progresses. Nonetheless, it will be ensured that where any changes are made, the policy requirements listed will be maintained.



Appendix A

Proposed Site Plan



BOUNDARY TREATMENTS

- A to B - New 1.2m(h) metal railing
B to C - Existing 1m(h) brick wall to be made good. Partial demolition at ends required.
C to D - New opening made for gated access to dry riser stairs.
D to E - New 1.2m(h) metal railing with gated access to refuse. Shoppers approach from Sainsbury's.
E to F - New 2m(h) c/b fence
F to G - Existing 2m(h) c/b fence with timber posts and gravel boards & wall to outbuilding.
G to H - New 1.8m(h) c/b timber fence
H to I - Existing 1.8m(h) c/b fence with concrete posts / gravel boards. Existing low flint wall to front, to be made good as required.
I to J - Existing 1.8m(h) c/b fence with timber posts / gravel boards. Existing low flint wall to front, to be made good as required.
J to K - Existing 1.8m(h) c/b fence with concrete posts / gravel boards.
K to L - New 1.8m(h) c/b fence with concrete posts / gravel boards.
L to M - Existing 1.2m & 1.8m(h) c/b fence with concrete posts / gravel boards.

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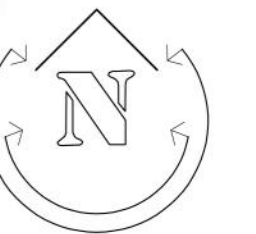
REVISIONS

Rev.	Date	By
P1	30.07.24	AS

	1BED	2BED
G	06	03
1st	08	03
2nd	05	03
TOTAL	19	09

TOTAL - 28 units (32.1% 2Bed)
Plus 3 x two bed cottages

- Site boundary
Existing building to be removed.
Existing tree / extent of canopy



Churchill Living
Your lifestyle • Your choice
Churchill House • Byfleet • Surrey • KT14 7AG
Tel: (01932) 338700

planningissues
TOWN PLANNING AND ARCHITECTURE
Churchill House • Christchurch Road
Parkside • Ringwood
Hampshire • BH24 3SD
Telephone: (01425) 462372 Fax: (01425) 462101

Project Title
PROPOSED CHURCHILL LIVING APARTMENTS
THE WINDMILL INN, MILL LANE,
RUSTINGTON, WEST SUSSEX,
BN16 3JN

Drawing Title
PROPOSED SITE PLAN
PLANNING

Scale	1: 200@ A1	Date	JULY'24
Drawn	AS	Checked	BS
Drawing No.	20091RT_PL002	Rev.	P1

PLOT DATE:- 30 July 2024

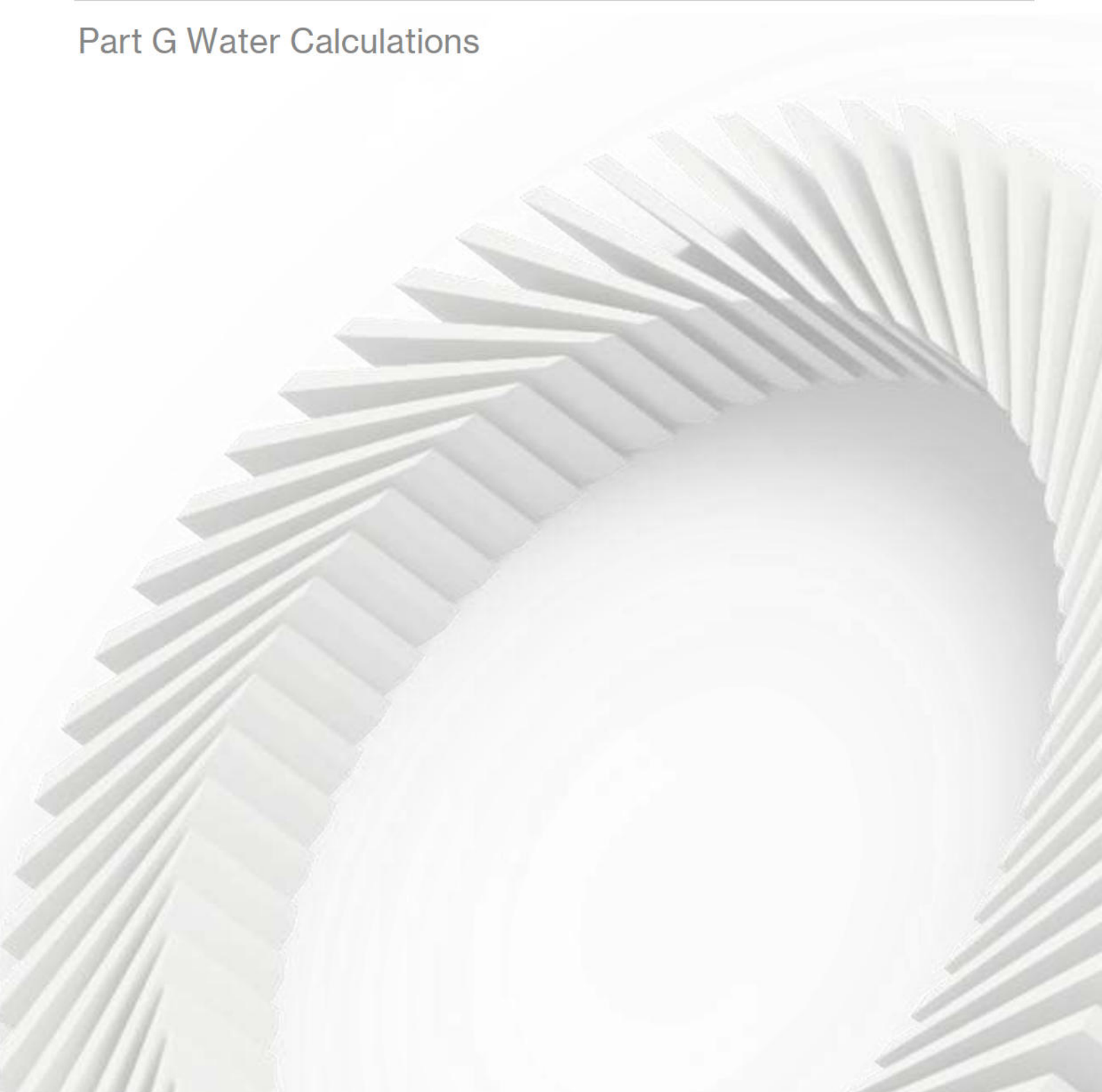


Proposed Churchill Living Apartments at The Windmill Inn, Mill Lane, Rustington, West Sussex, BN16 3JN



Appendix B

Part G Water Calculations





Job no: R4034
 Date: June 2024
 Assessor name: Brady Nightingale
 Registration no:
 Development name: The Windmill Inn & 34 Mill Lane, Rustington

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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:		1 Bed Properties		2 Bed Properties																	
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		Dual		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	4.5	6.57		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
	Part flush volume	3	8.88	3	8.88		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)	4	7.90	4	7.90		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Are both a Bath & Shower Present?		Shower only		Bath & Shower		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:	
Bath	Capacity to overflow		0.00	155	17.05		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Shower	Flow rate (litres / minute)	8	44.80	8	34.96		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Kitchen sink taps	Flow rate (litres / minute)	5	12.56	5	12.56		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Has a washing machine been specified?		Yes		Yes		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:	
Washing Machine	Litres / kg	8.17	17.16	8.17	17.16		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Has a dishwasher been specified?		Yes		Yes		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:	
Dishwasher	Litres / place setting	1.25	4.50	1.25	4.50		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Has a waste disposal unit been specified?		No		No		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:		Select option:	
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		102.4		109.6		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	93.2		99.7		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
	Mandatory level	Level 3/4		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	98.2		104.7		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
	17.K Compliance?	Yes		Yes		-		-		-		-		-		-		-		-	



Appendix C

SAP/ SBEM Calculations (Available on request due to size)

