Energy Statement

Cheaepeake, Reeds Lane, Sayers Common, Hassocks

March 2025
Report Produced by: C. Marshall
Report Produced for: Antler Homes

Contents

Revision	Date	Revision Description	Prepared by
First Issue	September 2023	-	CM
Second Issue	October 2023	Amended commentary to Introduction and Conclusions.	CM
Third Issue	March 2025	Report based on latest house plans.	CM

1. Introduction

Therm Energy Ltd has been appointed by Antler Homes to produce an Energy Statement to support a Planning Application for a proposed residential development at Chesepeake, Reeds Lane, Sayers Common near Haywards Heath. The Development comprises a mix of new homes, including affordable housing.
In total, it is proposed to build 27 new homes in a mix of dwelling types including detached, semi-detached, terraced houses and flats.

The requirements to be addressed are set out in the Mid Sussex District Plan 2014-2031, and associated policies.

The relevant policies in respect of energy efficiency are contained in:
*DP39: Sustainable Design and Construction***.**

The objective of this Policy is to promote development that makes the best use of resources and increases the sustainability of communities within Mid Sussex, and its ability to adapt to climate change.

2. The Development

The residential development at Chesepeake, Reeds Lane, Sayers Common comprises 32 new homes.
The house types and floor areas are shown in Table 1.
The site layout is shown in Figure 1.

Table 1 – Plots and floor areas

Reference	House Description	Internal Floor Area (m^2)
Plot 1	Detached	165
Plot 2	Detached	128.5
Plot 3	Detached	102
Plot 4	Detached	102
Plot 5	Detached	73+ 6 = 79
Plot 6	Detached	164.6
Plot 7	Semi- Detached	84
Plot 8	Semi- Detached	84
Plot 9	Detached	104.6
Plot 10	Detached	104.6
Plot 11	Semi- Detached	118.6
Plot 12	Semi- Detached	118.6
Plot 13	Semi- Detached	118.6
Plot 14	Semi-Detached	101.8
Plot 15	Semi-Detached	98.8
Plot 16	Semi-Detached	98.8
Plot 17	End Terrace	74+ 6 = 80
Plot 18	Mid-Terrace	79
Plot 19	Mid-Terrace	79
Plot 20	End Terrace	93
Plot 21	Semi-Detached	79
Plot 22	Flat	61.15
Plot 23	Flat	60.52
Plot 24	Detached	98.8
Plot 25	Detached	85
Plot 26	Detached	128.5
Plot 27	Detached	128.5
	Total Area	**2746**

Fig. 1 – Site Layout

3. The Requirements for Energy Efficiency

The requirements for renewable and low carbon energy are set out in Policy DP39: Sustainable design and Construction.

Policy DP39: Sustainable design and Construction.

Strategic Objectives:

1) To promote development that makes the best use of resources and increases the sustainability of communities within Mid Sussex, and its ability to adapt to climate change.

All development proposals must seek to improve the sustainability of development and should where appropriate and feasible according to the type and size of development and location, incorporate the following measures:

• Minimise energy use through the design and layout of the scheme including through the use of natural lighting and ventilation;

• Explore opportunities for efficient energy supply through the use of communal heating networks where viable and feasible;

• Use renewable sources of energy;

• Maximise efficient use of resources, including minimising waste and maximising recycling/ re-use of materials through both construction and occupation;

• Limit water use to 110 litres/person/day in accordance with Policy DP42: Water Infrastructure and the Water Environment;

The requirements for sustainability are also noted in the Validation criteria for planning applications. It requires the Sustainability & Energy Statement to contain all details necessary to demonstrate how the proposed development will be efficient in its use of energy and water to comply with Policy DP39 of the Mid Sussex District Plan and any relevant Neighbourhood Plan policy.

Guidance

- Please see policy DP39 of the Mid Sussex District Plan 2014-2031.
- Section 14 Meeting the challenge of climate change, flooding and coastal change of the National Planning Policy Framework.
- Planning Policy Guidance, Renewable and low carbon energy.

3.1. Use of natural lighting and ventilation

Where possible the dwellings will be designed to take advantage of natural lighting. This will include mmaximizing the amount of natural light inside by the size and number of windows. To suitable properties, folding or sliding doors will be installed.
Where possible, kitchens achieve a minimum daylight factor of at least 2%; living rooms, dining rooms and studies achieve a minimum average daylight factor of at least 1.5%, and 80% of the working plane should receive direct light from the sky. In practice the size and type of dwelling will influence the extent to which this can be achieved. For example, it is challenging to meet the daylight factor for kitchens which do not have a dual aspect.

It is proposed to provide natural ventilation to the dwelling. This is normally achieved by installing trickle vents in the windows and installing extract fans in wet rooms. The fans which are usually installed in kitchens and bathrooms draw moisture laden air out of the room and vent it outdoors. The ventilation strategy will need to comply with Part F *Ventilation* and Part L *Thermal* of the Building Regulations. It will be necessary to ensure that the design air permeability of the dwellings is not less than 5m3 /(h·m2) at 50Pa. Design air permeability rates lower than 5.0 are encouraged to use continuous running mechanical extract ventilation.

3.2. Communal Heating Networks

Where possible opportunities should be explored for efficient energy supply using communal heating networks where viable and feasible.
Communal heating is the supply of heat and hot water, from a source usually known as the energy centre, to a number of customers within one building only. This development comprises 27no. self-contained dwellings which do not lend themselves to communal heating. Therefore, this type of technology has not been considered any further.

3.3. Use of Renewable Energy

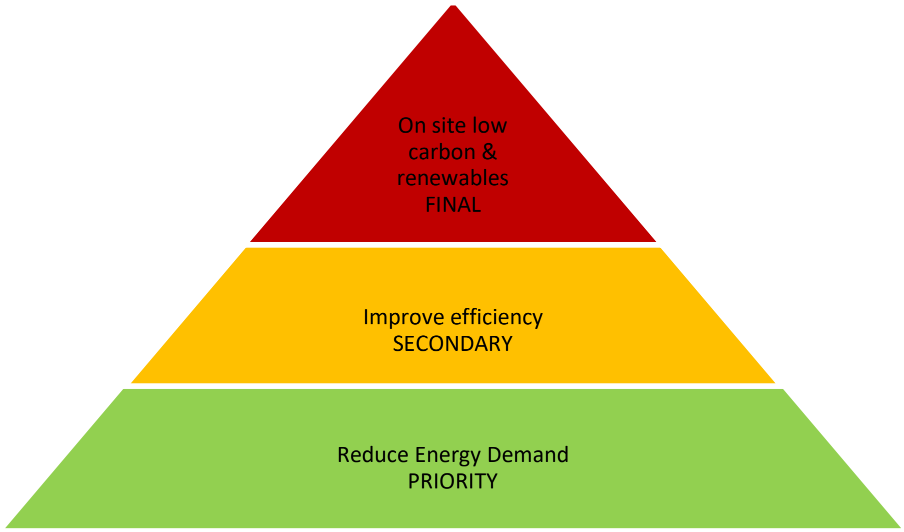
The development will take advantage of low carbon / renewable energy technologies in the design of the systems that will provide heating and hot water. See section 7 of this Report.

3.4. Limiting Water Use

In accordance with Policy DP42: *Water Infrastructure and the Water Environment*, internal water use will be limited to 110 litres/person/day. To meet this target, a water calculation has been prepared to advise on typical flow rates for the various water appliances used in the dwellings. A typical dwelling has been modelled and included in Appendix B of this report. The target will be met using water efficient appliances. Suggested flow rates for typical appliances are shown on Page 3 of the calculation.

4. The Energy Hierarchy

In line with best practice, the proposed energy strategy for this development will follow the principals of the energy hierarchy.
The energy hierarchy has three priorities, seeking to reduce energy use before meeting the remaining demand by the cleanest means possible:



- Be lean – use less energy: Optimise the building fabric, glazing, and structure to minimise energy consumption in the first instance by using low U-values and good air tightness, and ensure that active systems run as energy efficiently as possible.

- Be clean – supply energy efficiently: Further reduce carbon emissions through the use of decentralised energy where feasible, such as combined heat and power (CHP).

- Be green – use renewable energy: When the above design elements have been reasonably exhausted, supply energy through renewable sources where practical. This approach will include low carbon technologies, such as air source heat pumps.

5. Energy efficient design measures (“Be lean”)

Enhancing the thermal performance of the building envelope helps to future-proof the structure and also yields the greatest CO_2 savings. Adding renewable or low carbon technologies, technology will then yield maximum carbon reductions with lower long-term costs for the occupants of the dwellings.

The proposed thermal performance of the exposed elements will be designed to achieve the performance levels shown in Table 2. These performance levels should be capable of meeting the latest Building Regulation requirements as described on Part L (2021) of the Building Regulations.

Table 2 – Proposed energy efficiency measures

Element	Thermal U-values (W/m^2K)
Ground floor U-value	0.12
External wall U-value	0.18
Roof U-value	0.11
Windows U-value	1.2-1.3
Door U-value	1.0
Air permeability	4.0-5.0 ($m^3/h/m^2$)

Having reduced energy demand through improvements to the fabric, this development shall seek to reduce energy consumption further through the specification of mechanical and electrical systems with efficiencies that surpass the requirements of the Domestic Building Services Compliance Guide. A summary of the proposals are shown in Table 3.

Table 3 – Improvements to building services

Element	Proposed development
Low energy lighting	100% - using 75lm/W fixed lighting efficacy
Efficient of heating systems.	Heat pumps – minimum 250% Gas boilers – minimum 90%
Heating controls	Improved heating controls beyond Part L minimum standards.

6. Energy efficient systems (“be clean”)

6.1. Combined heat and power

Combined heat and power (CHP) systems use relatively cheap and clean fuels (such as natural gas) to generate heat and electricity on site. A typical CHP system uses combustion of natural gas to drive a turbine that produces electricity. The heat generated is captured and used to produce hot water.

As losses are minimised the carbon footprint of the energy generated is very low. However this is dependent on there being sufficient year-round local heat demand to fully utilise the heat generated by the CHP plant. An example would be developments of at least 500 dwellings, universities or hospitals.

Due to its size and location, this development is deemed not suitable for combined heat and power.

6.2. District heating networks

In a district heating network heat is supplied from one or more central energy centres to multiple buildings within the network. Supply to multiple buildings guarantees high year-round local heat demand which in turn allows the use of low carbon technologies within the energy centre, such as combined heat and power systems. Large plant and aggregated demand allows systems within the energy centre to run more efficiently.

Hot water is distributed within the network via highly insulated pipes. To connect to the network individual boilers are replaced with separately metered heat exchangers.

It is evident this proposed development is neither within the coverage of an existing district heating network, nor is it within an area designated as having potential for a future network. Due to its size and location, this development is not suitable for district heating.

7. Low and zero carbon energy sources (“be green”)

7.1. Solar Photovoltaics

Solar photovoltaics (PV) capture the sun's energy using photovoltaic cells. The cells convert sunlight into electricity, which can be utilised on site or transferred into the National Grid. PV cells are made from layers of semi-conducting material, usually silicon. When light shines on the cell it creates an electric field across the layers. The stronger the sunshine, the more electricity is produced. Groups of cells are mounted together in panels or modules that can be mounted on a roof.

The power of a PV cell is measured in kilowatts peak (kWp). This is the rate at which the cell generates energy at peak performance in full direct sunlight.

Photovoltaics offer high CO_2 savings, are simple to install and suitable for most buildings. The limiting factors for PV are the availability of suitable roof space and that the panels should be installed to face a favourable orientation, such as south, south-east or south-west. Overshadowing reduces the efficiency of the PV panels. The use of solar PV has to be established in line with the choice of heating system

7.2. Heat pumps

Heat pumps collect low temperature heat from renewable sources (such as the air or ground) and concentrate the heat to a usable temperature via a reverse refrigeration cycle. Useable heat is transferred to the dwelling via a heat exchanger and can be used for low temperature central heating and domestic hot water, though an immersion top-up may be required for DHW.

Heat pumps have some impact on the environment as they generally use grid supplied electricity to run the pumps. It is common for heat pumps to have a coefficient of performance of three, meaning that for every 1kWh of electricity used, over 3kWh of heat can be generated. The renewable component of the output is therefore taken as the difference between the output energy and the input energy, in this scenario the heat pump will be deemed to have delivered 2kWh of renewable energy.

Ground source heat pumps require external horizontal ground loops, or as is more likely in built-up environments, vertical loops fed into bore holes. The application of ground source heat pumps are therefore constrained by site ground conditions and available space.

Air source heat pumps have a slightly lower seasonal efficiency than ground source heat pumps, but require less space. Noise and space considerations should be assessed when determining an appropriate site for external condensing units.

Heat pumps are a very good option for sites not connected to the gas network. The lower carbon emission factors for electricity, because of the decarbonizing the national grid, are included in the latest SAP methodology. As such, they are proving to be a technology that can meet the latest Building Regulation Part L energy targets.

7.3. Solar thermal

Solar thermal systems use free heat from the sun to warm domestic hot water. A conventional boiler or immersion heater can be used to make the water hotter, or to provide hot water when solar energy is unavailable.

Solar thermal systems are most appropriate for buildings with high year-round domestic hot water demand. For this development, the hot water demand is anticipated to be relatively low.

Although a typical solar thermal system will be able to meet a proportion of the annual domestic hot water demand for a dwelling, many will use electricity to run pumps within the system. This means the resultant CO^2 and cost savings in a home with a gas boiler will be relatively low. Solar hot panels are not suited to provide hot water in apartments.

7.4. Wind turbines

Wind turbines use blades to catch the wind. When the wind blows, the blades are forced round, driving a turbine which generates electricity. The stronger the wind, the more electricity produced.

There are two types of domestic-sized wind turbine: Pole mounted and building mounted. Pole mounted turbines are free standing and are erected in a suitably exposed position, and are often about 5kW to 6kW in size. Building mounted turbines are smaller and can be installed on the roof of a home where there is a suitable wind resource. Often these are around 1kW to 2kW in size.

Large scale turbines, in exposed locations offer one of the best financial returns of all renewable energy systems as the payback of the system increases dramatically with the size of the turbine. However small- scale systems offer much lower levels of performance and recent studies have questioned the viability and output from such systems, particularly in urban environments.

7.5. Biomass

Biomass heating systems, burn wood pellets, chips or logs to provide warmth in a single room or to power central heating and hot water boilers. The carbon dioxide emitted when wood is burned is the same amount that was absorbed over the months and years that the plant was growing. The process is sustainable as long as new plants continue to grow in place of those used for fuel. There are some carbon emissions caused by the cultivation, manufacture and transportation of the fuel, but as long as the fuel is sourced locally, these are much lower than the emissions from fossil fuels.

When specifying biomass heating systems is important to consider the potential technical issues surrounding delivery and storage of fuel.

Although the CO_2 savings from biomass are substantial, the high levels of NOx emissions can make biomass systems unsuitable for urban environments. For this development, biomass heating can be disregarded.

7.6. Analysis of Proposed low and zero carbon technologies for this development

An analysis of low and zero carbon technologies for this development is shown in Table 4.

Table 4 – Analysis of Low Zero Carbon Technologies

Technology	Feasibility	Rank
Photovoltaic (PV) Panels	The apartments will have a sufficiently large roof area to be able to accommodate the installation of solar photovoltaic panels. Systems should be installed in an east, south or west orientation and be free from over-shading. In practice solar panels are most likely to be adopted in conjunction with gas central heating.	1
Air Source Heat Pumps (ASHP)	ASHP is an alternative low carbon technology that can result in a significant reduction in energy use for the provision of heating and hot water. Models are available to suit houses as well as apartments. For use in apartments, models can be located within an apartment without the need for an external unit. Systems are also available that incorporate a heat pump attached to the hot water cylinder.	1
Solar Thermal Hot Water (SHW)	Solar thermal hot water systems are a proven and mature technology in the UK and well suited to year-round domestic demand for hot water. Systems are restricted to only meeting a proportion of domestic hot water demand (typically in the region of 30-50%). Their use will assist with energy reduction but they are not suited for use in Flats. If a combination boiler is used to provide heat and hot water, this does not include any hot water storage. Therefore, this technology is considered unviable for this development.	2
Wind Turbines	The wind speed at Sayers Common is estimated at 5.6m/s at 10m above ground level through to 6.1m/s at 45m above ground level, which is relatively modest and not conducive to a very high energy yield. Further, the associated landscape and visual impact implication, given the site's location, would restrict inclusion of larger scale wind turbines (>1MWe).	3
Combined Heat and Power (CHP) and CHP District Heating	Although natural gas CHP or cogeneration is an efficient method of generating and utilising electricity and heat, the increased thermal efficiency due to fabric efficiency of new homes prohibits the application of domestic Micro-CHP systems such as the Baxi Whispergen. This is a relatively small development with limited opportunities to connect to district heating, or to provide facilities to install a combined heat and power plant.	4

7.7. Recommended low and zero carbon energy technologies

The location of the site provides an ideal opportunity to incorporate low and zero carbon energy sources. The following strategy is proposed.

- Use of air source heat pumps to provide heating and hot water. Heat pumps are regarded as a form of low carbon technology.
  Or
- Use of solar photovoltaic panels. These should be used in conjunction with gas fire central heating. However, if using this option, there must be sufficient roof area to accommodate the required number of solar panels. If using gas, It is likely that other technologies will need to be incorporated, such as waste-water heat recovery, to meet the energy targets imposed by Part L 2021) of the Building Regulations.

8. Energy Demand & Carbon Emissions

SAP provisional energy calculations have been prepared for typical dwelling types, to assess the proposed energy use and carbon emissions for the Development. The calculations are based on the fabric standards and building services shown in Tables 2 and 3 of this Report, and the use of air source heat pumps to provide heating and hot water. For the carbon emissions (Table 6), a comparison is made between the proposed carbon emissions, and the targets set by Part L (2021) of the Building Regulations. The supporting SAP calculations are provided in Appendix A of this Report.

Comparing the proposed carbon emissions for this Development against the requirements of current Building Regulations, the Development surpasses the targets by a significant margin.

Table 5 - Proposed Energy Use [kWh/ year]

Dwelling ref.	Proposed Annual Energy Use (kWh/year)
Plot 1	4, 628
Plot 2	3, 960
Plot 3	2, 929
Plot 4	3, 468
Plot 5	3, 116
Plot 6	4, 628
Plot 7	2, 876
Plot 8	2, 876
Plot 9	4, 268
Plot 10	4, 268
Plot 11	3, 657
Plot 12	3, 657
Plot 13	5, 451
Plot 14	3, 291
Plot 15	3, 119
Plot 16	3, 119
Plot 17	3, 079
Plot 18	2, 610
Plot 19	2, 527
Plot 20	2, 943
Plot 21	2, 876
Plot 22	2, 397
Plot 23	2, 397
Plot 24	2, 929
Plot 25	2, 929

Plot 26	3, 960
Plot 27	3, 960
Total	**91, 918**

Table 6 - Carbon Emissions [Tonnes CO_2/ year]

Dwelling ref.	Target Carbon Emissions ($kgCO_2$/Year)	Proposed Carbon Emissions ($kgCO_2$/Year)	Proposed Carbon Savings %
Plot 1	1, 615	692	57
Plot 2	1, 424	588	58
Plot 3	1, 037	432	58
Plot 4	1, 295	512	60
Plot 5	1, 432	458	67
Plot 6	1, 615	692	57
Plot 7	966	421	56
Plot 8	966	421	56
Plot 9	1, 615	692	60
Plot 10	1, 614	692	58
Plot 11	1, 320	540	59
Plot 12	1, 320	540	59
Plot 13	1, 321	540	59
Plot 14	1, 146	484	57
Plot 15	1, 050	458	56
Plot 16	1, 050	458	56
Plot 17	1, 407	452	67
Plot 18	893	380	57
Plot 19	849	367	56
Plot 20	1, 015	431	57
Plot 21	966	421	56
Plot 22	366	732	50
Plot 23	366	732	50
Plot 24	1, 037	432	58
Plot 25	1, 037	432	58
Plot 26	1, 424	588	58
Plot 27	1, 424	588	58
Total	**31, 570**	**14, 144**	**55**

9. Conclusion

The proposed Development at Chesepeake, Reeds Lane, Sayers Common comprises a mix of new homes, including affordable housing.
In total, it is proposed to build 27 new homes and the layout proposes detached, semi-detached and terraced houses and flats.

The requirements to be addressed are set out in the Mid Sussex District Plan 2014-2031, and associated policies.

The development will seek to improve the fabric efficiency of the dwellings as recommended by the energy hierarchy. The proposed standards of thermal insulation are shown in Table 2 and represent a very good standard of thermal insulation.

In addition, it is proposed to install renewable/low carbon energy technologies as detailed in Section 7.7 of this Report.

Representative house types have been modelled using the SAP methodology and the performance compared against the targets of Part L (2021) of the Building Regulations regarding carbon emissions. It can be seen, subject to the final on choice of building services etc, e.g. make/model of heat pumps or similar, that the Development has the potential to achieve a significant reduction in carbon emissions which will contribute towards making this a very sustainable development.

Table 7 – Proposed Improvement to the dwellings Carbon Emissions

Dwelling ref.	**Total Carbon Tonnes CO_2/ year**		**% Improvement**
	Proposed Tonnes	Part L (2021) Target	
All Dwellings	**31, 570**	**14, 144**	**55**

Supporting SAP thermal calculations to support the findings of this Report are provided in Appendix A.

The requirements of Policy DP42: Sustainable Design, regarding internal water use have been considered, and the Development proposes to limit water use to 110 litres/person/day. A supporting calculation for a typical house type is shown in Appendix B.

Appendix A – SAP Thermal Calculations

All House types have been modelled using the SAP assessment software.
The following is a summary of SAP Calculations carried out on a range of dwelling types that reflect the proposed development. The Dwelling and Target emission rates are shown together with the proposed percentage reduction in carbon emissions. The full SAP calculations are available upon request.

Block Compliance

elmhurst energy

Block Reference	BA-80 Revised Energy Report	Issued on Date	17/03/2025
Block Name			
Calculation Type	New Build (As Designed)		
Assessor Details	Mr. Colin Marshall	Assessor ID	AV43-0001
Client	., Antler Homes, ., ., .		

Block Compliance Report - DER

Block Reference: BA-80 Revised Energy Report — Block Name:

Property-Assessment Reference	Floor area (m^2)	DER ($kgCO_2/m^2$)	TER ($kgCO_2/m^2$)	% DER/TER
BA-80-01 Plot 1 - SAP Design	164.60	4.20	9.81	57.19 %
BA-80-03 Plot 3 - SAP Design	102.00	4.24	10.17	58.31 %
BA-80-19- Plot 22 - SAP Design	50.50	7.25	14.50	50.00 %
BA-80-02 Plot 2 - SAP Design	128.00	4.60	11.13	58.67 %
BA-80-04 Plot 4 - SAP Design	102.00	5.02	12.70	60.47 %
BA-80-05 Plot 5 - SAP Design	79.05	5.80	18.12	67.99 %
BA-80-06 Plot 6 - SAP Design	164.60	4.20	9.81	57.19 %
BA-80-07 Plot 7 & 8 - SAP Design	84.00	5.01	11.50	56.43 %
BA-80-09 Plot 9 - SAP Design	104.60	5.03	12.64	60.21 %
BA-80-10 Plot 10 - SAP Design	104.60	4.95	11.97	58.65 %
BA-80-11 Plots 11 & 12 - SAP Design	119.00	4.54	11.10	59.10 %
BA-80-12 Plots 13 - SAP Design	119.00	4.54	11.10	59.10 %
BA-80-13 Plots 14 - SAP Design	102.00	4.75	11.24	57.74 %
BA-80-14 Plots 15 & 16 - SAP Design	99.00	4.63	10.61	56.36 %
BA-80-15 Plot 17 - SAP Design	80.05	5.65	17.58	67.86 %
BA-80-16 Plot 18 - SAP Design	79.00	4.82	11.31	57.38 %
BA-80-17 Plot 19 - SAP Design	79.00	4.66	10.75	56.65 %
BA-80-18 Plot 20 - SAP Design	93.00	4.64	10.92	57.51 %
Totals:	1854.00	88.53	216.96	
Average DER = 4.78 $kgCO_2/m^2$	% DER/TER	PASS		
Average TER = 11.70 $kgCO_2/m^2$	59.16 %			

Appendix B – Inter Water Use Report

The following report is in support of Policy DP42: Sustainable Design, internal water use.

Part G Compliance Report

PROJECT DETAILS

Project Reference:	BC-50-80 -3 Bed - Part G Water
Client:	Antler Homes
Property:	Typical House Chesepeake, Reeds Lane Sayers Common BN6 9GB

Local Authority:	Mid Sussex District Council
Agent:	Boyer Planning

Assessor:	Colin Marshall
Address:	Therm Energy Ltd
Contact:	
Software:	G-Calc 2015 version 3.0.2
Prepared on:	11-Sep-23

RESULT SUMMARY

By following the Government's national calculation methodology for assessing water efficiency in new dwellings this 3 bed dwelling, as designed, achieves a water consumption of 109.4 litres per person per day.

Compliance with Building Regulation 36(1) has been demonstrated.

Table 1: The Water Calculator for New Dwellings					
Installation Type	Unit of measure	Value	Use factor	Fixed use	litres/person/day
WC(single flush)	Flush volume (litres)	0	4.42	0.00	0
WC(dual flush)	Full flush vol.	0	1.46	0.00	0
	Part flush vol.	0	2.96	0.00	0
WC(multiple fittings)	Average effective Flush vol. (litres)	3.59	4.42	0.00	15.87
Taps(excl. Kitchen)	Flow rate (litres/min)	4	1.58	1.58	7.9
Bath (shower also present)	Capacity to overflow (litres)	167	0.11	0.00	18.37
Shower (bath also present)	Flow rate (litres/min)	9	4.37	0.00	39.33
Bath only	Capacity to overflow (litres)	0	0.50	0.00	0
Shower only	Flow rate (litres/minute)	0	5.6	0.00	0
Kitchen sink taps	Flow rate (litres/minute)	8.5	0.44	10.36	14.1
Washing Machine	litres/kg dry load	7	2.1	0.0	14.7
Dishwasher	litres/place setting	1.25	3.6	0.0	4.5
Waste disposal	litres/use	0	3.08	0.0	0
Water softener	litres/person/day	0	1.0	0.0	0
		Total calculated use (litres/person/day)			114.77
		Contribution from greywater (litres/person/day)			-
		Contribution from rainwater (litres/person/day)			-
		Normalisation factor			0.91
		Total Water Consumption. Code for Sustainable Homes (litres/person/day)			**104.4**
		External water use			5.0
		Total Water Consumption. (36(1)) (litres/person/day)			**109.4**

Table 2: Consumption Calculator for multiple fittings for New Dwellings			
2.1: Taps (excluding kitchen sink taps)			
	Flow Rate (l/min)	Quantity (No.)	Total per fitting type
1 Bathroom	4	1	4
2 Cloakroom	4	1	4
3			
4			
Total (Sum of all Quantities)		2	
Total (Sum of all totals per fitting type)			8
Average Flow Rate (l/min)			4
Maximum Flow Rate (l/min)			4
Proportionate flow Rate (l/min)			2.8

Table 2: Consumption Calculator for multiple fittings for New Dwellings			
2.7: WC's			
WC Type	Effective flushing volume (litres)	Quantity (No.)	Total per fitting type
1 Bathroom	3.594	1	3.59
2 En-suite	3.594	1	3.59
3			
4			
Total (Sum of all Quantities)		2	
Total (Sum of all totals per fitting type)			7.19
Average effective flushing volume (litres)			3.59

Summary of fitting types "As Designed"			
Type	Description	Flow rates, volumes etc.	Qty
Taps	Bathroom	4 litres/min	1
	Cloakroom	4 litres/min	1
Baths		167 litres to overflow	1
Dishwashers		1.25 litres/place	1
Washing Machines	7kg dry load	7 litres/kg	1
Showers	Shower	9 litres/min	1
WC's	Bathroom	4.8 / 3 litres flush vols.	1
	En-suite	4.8 / 3 litres flush vols.	1
Kitchen/Utility taps	Kitchen	8.5 litres/min	1

The lower section of this table is to be filled in by the builder prior to completion. The descriptions, values and quantities should represent the 'as built' specification. Please note the values above represent design values and should not be exceeded without prior consultation with the agent/designer (Boyer Planning).
The completed table should be returned to the assessor: Colin Marshall.

Declaration of fitting types "As Built"			
Type	Make and Model	Flow rates, volumes etc.	Qty
Taps			
Baths			
Dishwashers			
Washing Machines			
Showers			
WC's			
Kitchen/Utility taps			

Project ref: BC-50-80 -3 Bed - Part G Water - Typical House

The above declaration of fittings, values and quantities is a true reflection of those installed on this project.

Name: .... Signature: .... Date: ....

------End of Report------