

Energy Statement

Energy and Carbon Reduction

Land at Rectory Farm (North), Yatton, North Somerset

Reference Number: 008517

Date: March 2023

Issue: Initial



PLANNING



DESIGN



ON-CONSTRUCTION



EXISTING BUILDINGS

thefesgroup.com

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Company Profile

Established in 2007 as a family firm, we set out to create a sustainable, resilient business, establishing a happy and positive working environment for both clients and colleagues. It was important for us to offer adaptable and growing solutions for the areas of the construction industry that would benefit from them the most.

Creating an environment that was a pleasure to work in for both colleagues and clients was, and remains, incredibly important to us. Building our future on the foundations of honest relationships, flexibility and efficiency means that we value every client's success as though it were our own.

We have grown to become a trusted construction compliance partner. We continue to grow, to offer packages of sustainability, environmental and acoustic services, with the long-term aim of making our clients' lives easier, so they can focus on the jobs that they enjoy.

Today, the business works with a wide spectrum of clients from household name plc firms, one-off builds and everything in between. Our client list includes many of the nation's major house builders and contractors, as well as universities and public sector organisations. The team also lends their know-how to many architectural practices, M&E consultants and planners.



LAND AT RECTORY FARM (NORTH), YATTON, NORTH SOMERSET

Introduction

This report has been prepared by the FES Group on behalf of Persimmon Homes Severn Valley to accompany the planning application for the proposed development known as Land at Rectory Farm (North), Yatton, North Somerset.

The development proposals will see the construction of 190 new dwellings, consisting of detached, semi-detached, terraced dwellings and apartments].

This report reviews the proposed energy and carbon reduction strategy advanced by Persimmon Homes Severn Valley within the context of local and national planning policy. The report in particular considers and evaluates the measures incorporated into the design of the development to reduce the predicted CO₂ consumption of the site over 2021 Building Regulations under SAP10.

The following documents were considered when formulating the report:

- National Planning Policy Framework 2021 The NPPF strengthens the emphasis on sustainable development and encourages Local Authorities to adopt standards consistent with the Government's zero carbon building policy and other nationally described standards.
- Building Regulations Part L 2021 Approved Document L 2021 Conservation of Fuel and Power in new dwellings sets minimum energy efficiency and fabric efficiency standards for all new domestic buildings.



Sustainable Design

The building fabric, the building services and the management of a building broadly determine the energy use of a building. In understanding this, design teams can take measures to advance sustainable design from the earliest stages of a development. However sustainability is not limited to issues concerning energy consumption. Material selection, the protection of local environments, addressing flood risk and the health and wellbeing of future occupants are all issues requiring consideration. Addressing all these issues in an integrated and intelligent manner will result in truly sustainable developments.

Material Selection

Significant amounts of energy and natural resources are consumed in the production, transportation and disposal of building materials. Two issues are of significant importance in the procurement of materials: the environmental impact of materials and the sourcing of materials. Persimmon Homes Severn Valley is dedicated to taking pro-active measures to addressing these issues.

	BRE Green Guide Rating
External Wall	A+
Ground Floor	В
Intermediate Floor	С
Roof	A+
Internal Walls	Α
Windows	А

Table 1- Green Guide Rating of Specification

The developer will choose materials which have a lesser environmental impact. This will be implemented during the procurement process. Suppliers will be obliged to produce Environmental Management System certificates covering the sourcing and production of materials. Timber or timber composite products will be sourced from responsible sources. Suppliers will be obliged to provide full Chain of Custody Certificates right through the supply chain; from the initial timber yard, manufacturing process, transformation and distribution. Secure certificates must be produced by valid accrediting bodies – FSC, PEFC, CSA, SFI & MTCC.

Flood Risk

The Flood and Water Management Act 2010, directs developers to avoid, reduce and delay the discharge of rainfall to public sewers and watercourses through the use of Sustainable Urban Drainage Systems (SUDS) with the aim of protecting watercourses and reducing the risk of localised flooding and pollution.

This obligation is taken seriously:

Where possible, impermeable surfaces are kept to a minimum, thus allowing for maximum infiltration (e.g. permeable paving)

Furthermore the site will allow the successful segregation of waste on site in line with Best Practice policies. However the contractor will be obliged to adopt many of the principles of the waste hierarchy:

- Accurate specifications of materials and volumes.
- Recycling and re-use of waste on site.
- Arrange take back schemes with suppliers.
- Instruct a licensed waste contractor to segregate site waste for recycling.



Pollution during Construction

The contractor will be required, under the terms of their contract, to minimise dust, fumes, discharges and any other form of pollution on site, in line with best practice policies:

 The Control of Dust and Emissions from Construction & Demolition: Best Practice Guidance.

The sustainable management and monitoring of waste generated during the construction of a development is a major concern to local and national planners.



Health and Wellbeing

In achieving ever stricter levels of energy efficiency, it is important that designers do not lose sight of the fact that they are building homes that people can live in and not just occupy. This is an integral part of sustainability, and a hugely important consideration if the population (and the market place) is to tolerate the sustainability agenda. While it is quite difficult to measure or even quantify health and wellbeing, the following measures are a sample of the efforts made by Persimmon Homes Severn Valley to address this issue: The proposed properties will have sufficient living /dining space. While this is obviously a marketing consideration, it does fall within this category.

The principal living rooms have sufficient glazing to allow natural light to penetrate into the rooms. Numerous studies have shown this to be beneficial to the general health and happiness of occupants. Daylighting calculations can be undertaken to demonstrate that living rooms, dining rooms, kitchen and home offices receive adequate daylighting.

- The property will benefit from a garden or private space for recreation however, this may not apply to flats. This will take the form of secure rear gardens to each property.
- The property has dedicated internal recycling facilities and accessible external storage in line with the local council waste and recycling collection scheme.

Water Efficiency

The average person consumes some 150 litres per day; this represents an annual increase of 1% since the 1930s. Despite the United Kingdom's wet and temperate climate, climate change will most probably result in an increase in the occurrence of drought orders and hosepipe bans. With this in mind, it is not difficult to appreciate that within the next few decades the UK (particularly the South East) will face regular water shortages.

In response to this water efficiency has gained equal billing, alongside energy efficiency. The following are the principle policy drivers.

- The Approved Document G (2015) restricts new build dwellings to a maximum consumption of 125 litres per person per day. The Water Efficiency Calculator of New Dwellings also includes an allowance for external water use.
- The Code for Sustainable Homes was first introduced in April 2007. While now disbanded, Included within the Code was mandatory water efficiency standards. Homes constructed to Code for Sustainable Homes Level 3 and 4 must achieve a maximum internal water consumption of 105 litres per person per day. Dwellings constructed to Code Levels 5 and 6 must achieve an internal water consumption of 80 litres per person per day.

 Part L 2021 and SAP10 will take account of Part G and water consumption in the calculation of the forecasted energy demand of a dwelling.



The below table details the recommended sanitary ware fittings to be adopted by Persimmon Homes Severn Valley to meet with the requirement to achieve 125 Litres per person per day as required by Building Regulations Part G 2015.

Installation Type	Unit of Measurement	Capacity/Flow Rate	Use Factor	Fixed Use	Litres Per Person Per Day
WC (Dual Flush)	Full Flush (litres)	4	1.46	0.00	5.84
	Part Flush (litres)	2.6	2.96	0.00	7.70
Taps (excluding kitchen tap)	Flow rate (litres/minute)	6	1.58	1.58	11.06
Baths (where shower present)	Capacity to overflow (litres)	180	0.11	0.00	19.80
Showers (where bath present)	Flow rate (litres/minute)	9	4.37	0.00	39.33
Kitchen sink tap	Flow rate (litres/minute)	6	0.44	10.36	13.00
Washing Machine	Litres/kg dry load	8.17	2.1	0.00	17.16
Dishwasher	Litres/place setting	1.25	3.60	0.00	4.50
				Total	118.39

Contribution from Greywater (litres/person/day)	0
Contribution from Rainwater (litres/person/day)	0
Total Internal Water Consumption	118.39
Normalisation Factor	0.91
Water Consumption with Normalisation Factor	107.73
External Use	5.00
Part G Water Consumption	112.73

Table 2 – Water Consumption

Renewable Technologies

There are a number of recognised renewable technologies which have the potential to reduce the energy consumption of a dwelling. However given the nature of the development, we judge that the following technologies are worthy of consideration;

- · Solar thermal panels.
- Biomass
- Photovoltaic panels.
- Air source heat pumps.
- · Combined Heat & Power
- · Wind Power

Solar Thermal

Solar thermal panels use radiant solar energy to heat water for domestic consumption. The system works successfully across the UK as they can work in diffuse weather conditions. In comparison to other technologies it is considered a reliable and proven technology. The system works most efficiently when the panel or evacuated tube is mounted on a 10-60° pitch facing due south, though other combinations do work successfully. During late spring to early autumn months, the system can be expected to meet some 70-90% of a dwellings domestic hot water needs.

Most systems in the UK are two panel systems, typically 4 sq m in size and accompanied with a 180-250 litre cylinder with a dedicated solar storage capacity of 65-110 litres. The typical installation costs for solar thermal vary, especially when large volumes are considered. However a rough estimate is £3500 per plot.

Occupants can expect annual savings in the region of £50-85 per year, which is relatively modest. Solar thermal panels do not qualify for feed in tariffs, however it is expected that solar thermal systems will benefit from the Renewable Heat Incentive. A 20-25 year payback can be expected, dependent on usage and dwelling type.

Taking into consideration the proposed development, the site layout and orientation a two panel systems is recommended for consideration.



Biomass

Biomass boilers offer an environmentally sound, heating solution. Heating is generated by burning biomass, such as wood pellets or logs. This will emit the same amount of CO2 as is absorbed while the plants were growing, therefore, the biomass is classed as carbon neutral.

Unfortunately, such a provision for this development is both unfeasible and out of proportion to the requirement.



Photovoltaic

Photovoltaic panels convert sunlight into electricity for use within a dwelling. PV panels use cells to convert light into electricity. A PV cell usually consists of 1 or 2 layers of a semi-conducting material such as silicon. The greater the intensity of sunlight, the more electricity is generated. PV systems can come in different forms. The most aesthetically pleasing are PV tiles which resemble roof tiles. However the most popular are modules which can either sit on the roof or be integrated into it. The technology is most efficient when oriented due south. However panels orientated south of east or west are suitable. Generally panels orientated away from due south require a greater surface area to generate a set amount of energy.

PV is a viable option and if installed on a select number of plots across a development, this would be the most cost effective solution to a site wide CO2 reduction. As a result we would recommend this technology for consideration.



Air Source Heat Pumps

Air source heat pumps extract heat from the outside air. The heat is absorbed into a fluid, which is pumped through a heat exchanger. Low grade heat is then extracted by the refrigeration system and after passing through the compressor is concentrated into a higher temperature. This energy is then used to heat water for space and hot water use within the dwelling. While heat pumps use national grid electricity, and so are not a renewable resource, they utilise a heat source which is naturally renewed in our environment and so are considered a low carbon technology.

Heat pumps have stated CoPs in the region of 2-4, though test results outside of the laboratory have produced mixed results. Typically the heat pump is located on an external wall. It is generally accepted that 1kW in heat pump size will provide enough heating for 20m2 of floor space.

Persimmon Homes Severn Valley have confirmed that all dwelling on site will be installed with ASHPs.



Combined Heat and Power (CHP)

Combined heat and power utilises the waste energy in the generation of electricity to provide space heating and hot water to a development. In conventional means of power generation copious amounts of energy is wasted in the form of heat. The utilisation of this waste heat can see efficiencies of CHP systems typically exceed 90%.

Combined heat and power is not a renewable technology but instead is a DECC recognised low carbon technology which qualified for the Low Carbon Building Programme. To qualify as a renewable technology the use of biomass pellet or bio-diesel would be required. At the present time biomass CHP is very much in its infancy in the UK. Furthermore it is imagined there will be significant problems in locating a sustainable and local source of pellet. Without such a source the reliability of such a system and the net carbon benefit of pellet sourced from a distance are questionable. As a result we do not recommend CHP for consideration on this development.



Wind Power

The principle of harnessing wind power is well established in the UK with access to over 40% of the total European wind resource. Until recently, developments have been concentrated within coastal regions; however technological advances mean that wind power is viable in many urban locations.

Wind turbines are a means of capturing the power within a moving air mass (wind) and converting it into electricity. As yet there is no simple and practical method of incorporating wind generated electricity to sites containing a number of buildings, or requiring high energy usage.

Furthermore, the urban location also means that it would prove difficult to harness sufficient wind energy to meet the needs of the development. The high density of urban areas obstructs air patterns and reduces the efficiency of the turbine. The size of the turbine required is also likely to detract unacceptably from the local area and generate a significant amount of noise, both of which prejudice local residential amenity.

For these reasons, together with the high installation costs, potential noise pollution and high likelihood of not achieving planning approval we are not proposing to employ wind turbines on this site.



Energy Strategy

The Context

The proposed works fall under the scope of Approved Document L 2021. The Approved Document sets minimum fabric energy efficiency standards and a maximum CO2 emission rate for residential buildings. To place the proposed energy strategy into its correct regulatory context it is worthwhile summarising the minimum standards included in the Approved Document.

Element	Part L 2021 Minimum Standard
External Walls	0.26W/m2K
Roof	0.16W/m2K
Floor	0.18W/m2K
Glazing & Doors	1.80W/m2K
Air Test	8.00m3/h.m2 at 50Pa

Table 3 - Minimum Fabric Efficiency Standards

Proposed Strategy

The National Planning Policy Framework requires that all development proposals are in line with the Government's zero carbon buildings programme.

The figures and calculations detailed in this report have been taken from SAP10 (2021 Building Regulations).

In response to this guidance, and recent shifts within the industry, Persimmon Homes Severn Valley proposes the adoption of a fabric first energy strategy which addresses the core policy goals of sustainable construction:-

- Reduced CO2 emissions to combat the causes of climate change.
- Reduced energy consumption to address legitimate concerns of energy security.

By reducing the energy requirement of the building, the sustainable credentials of each development are enhanced and are not validated by simply bolting on expensive renewable equipment. By focusing on fabric performance and the provision of efficient heating systems each dwelling is intrinsically "green".

Before the potential of various technologies can be assessed, it is first necessary to calculate the base line energy consumption of the development and hence the target reduction.

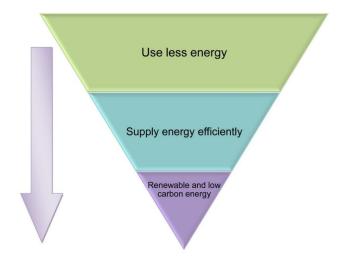
The proposed dwellings were modelled in SAP10 to determine the energy consumption and corresponding CO2 emissions of the development. Standard Assessment Procedure, or SAP, is the Government's approved methodology for the calculation of energy consumption and CO2 emissions for new build dwellings.

In line with best practice the proposed energy strategy for Land at Rectory Farm (North), Yatton, North Somerset will adhere to the principles of the Energy Hierarchy;

- Be Lean reduce the need for energy.
- Be Clean supply and use energy in the most efficient manner.
- Be Green supply energy from renewable sources.

Adhering to the principles of the Energy Hierarchy has a number of benefits. The principle benefits are:

- By reducing the energy requirement of each dwelling the renewable requirement shrinks in proportion. This has obvious cost benefits.
- The sustainable credentials of each development are enhanced and are not validated by simply bolting on expensive renewable equipment.
 By focusing on the fabric performance and the provision of efficient heating systems each dwelling is intrinsically "green".



Be Lean.

Persimmon Homes Severn Valley have confirmed Lean measures equal to a 2.86% reduction in fabric heat loss across the building envelope. This greatly reduces the need for energy within a dwelling.

Be Clean.

Persimmon Homes Severn Valley have confirmed Clean measures which include temperature & zone controls to allow the user to maximise the control to ensure efficient use of the main heating system. 100% Low Energy Lighting to be installed alongside dMEV.

Be Green.

Persimmon Homes Severn Valley have confirmed Green measures where air source heat pumps and EV charging points will be installed on every dwelling.



Establishing a Baseline

To adequately ascertain the potential of Persimmon Homes Severn Valley preferred strategy, a baseline energy consumption associated with the development must be calculated. As such the development was modelled in SAP10 to determine the current CO² emission and associated energy requirement prior to the incorporation of improved fabric efficiencies and renewable technologies. The table below summarises the results calculated.

House Type	No	Baseline Emission Rate (kg/year)	Baseline Energy Rate (kWh/year)
HT - Arden - Semi	24	17,449.17	91,891.73
HT - Ashdown - Semi	12	12,942.82	67,760.88
HT - Danbury - Semi	16	13,864.03	72,484.00
Ht - Delamare - Det	5	5,298.35	27,755.18
HT - Saunton - Semi	14	14,729.57	77,103.42
HT - Sherwood - Det	8	7,977.22	41,639.94
HT - Charnwood - Det	10	10,235.32	53,377.16
HT - Burnham - Det	5	5,968.59	31,244.61
HT - Whinfell - Semi	14	15,535.47	81,086.42
HT - Whiteleaf - Det	4	4,597.19	23,994.74
HT - Thetford - GF	14	11,094.68	58,176.06
HT - Thetford - MF	14	10,070.10	52,609.32
HT - Thetford - TF	14	10,691.05	55,957.03
HT - 2A - Semi	16	14,310.00	75,022.56
HT - 2A - Mid	8	6,436.32	33,650.76
HT - 4A - Semi	12	13,179.43	68,909.60
Total	190	<u>174,379.30</u>	912,663.41

Table 4 - Baseline Energy Consumption & CO²

The calculations summarised in the table above confirm Land at Rectory Farm (North), Yatton, North Somerset has a baseline site wide energy requirement of 912,663.41kWh/year and an associated CO2 emission rate of 174,379.30kgCO2/year.



Fabric and Building Services Specification

Persimmon Homes Severn Valley proposes a series of fabric and building service enhancements that exceeds the minimum requirements of Part L 2021. By placing a significant emphasis on the performance of the fabric of each property, reductions in energy and carbon will be achieved. The following table details the anticipated fabric efficiency and building services standards to be incorporated into the design. These measures constitute the lean efforts.

Element	Part L 2021	Enhanced Specification
Wall	0.26W/m ² K	
Roof	0.16W/m ² K	0.09/0.15W/m ² K
Floor	0.18W/m ² K	0.11-0.12W/m ² K
Glazing & Doors	1.80W/m ² K	1.10-1.30W/m ² K
Air Test	4.50m3/h.m² at 50Pa	4.50m3/h.m² at 50Pa

Table 5 – Enhanced Specification Summary & Comparison

The U-values above show that the minimum requirements of Part L have been exceeded.

In addition to the summary above the following additional measures will be incorporated into the design, constituting the **clean** measures to reduce energy consumption;

- Persimmon Homes Severn Valley have adopted a set of bespoke thermal bridging details which is being implemented on the site. These reduce thermal bridging throughout junctions and penetrations through the building fabric.
- Efficient independent heating systems will be provided with time and temperature zone control. These will allow the eventual occupants to exercise control over their heating system and thus reduce energy consumption.
- Energy efficient lamps will be installed in each light fitting

 Water consumption is now included in the calculation of a property's energy consumption.
 Thus each property will adhere to the requirements of Approved Document G- maximum internal water consumption of 125 litres per person per day.

It is clear that the proposed strategy places a great importance on the efficiency of a buildings thermal envelope and internal building services. This emphasis is to be encouraged. It recognises that it is inherently more sustainable to invest resources in reducing a property's long term energy consumption in contrast to short term generation benefits.

Reduced Emission Rate & Energy Requirement

To determine the benefits of the proposed specification, the development was again modelled in SAP10. The table below summarises the results calculated.

House Type	No	Enhanced Emission Rate (kg/year)	Enhanced Energy Rate (kWh/year)
HT - Arden - Semi	24	7,590.27	80,295.15
HT - Ashdown - Semi	12	5,649.74	59,412.23
HT - Danbury - Semi	16	6,303.99	66,499.96
Ht - Delamare - Det	5	2,504.26	26,301.53
HT - Saunton - Semi	14	6,564.26	69,151.59
HT - Sherwood - Det	8	3,769.38	39,673.92
HT - Charnwood - Det	10	4,881.89	51,315.30
HT - Burnham - Det	5	2,624.96	27,564.58
HT - Whinfell - Det	14	6,973.84	73,287.55
HT - Whiteleaf - Det	4	2,054.45	21,604.02
HT - Thetford - GF	14	4,949.14	52,245.70
HT - Thetford - MF	14	4,868.57	51,538.42
HT - Thetford - TF	14	5,030.55	53,176.27
HT - 2A - Semi	16	6,690.72	70,621.44
HT - 2A - Mid	8	3,033.72	32,143.44
HT - 4A - Semi	12	5,729.02	60,396.76
Total	190	<u>79,218.75</u>	<u>835,227.85</u>

Table 6 - Reduced Emission Rate & Energy Requirement

The calculations summarised in the table above confirm Land at Rectory Farm (North), Yatton, North Somerset has a reduced energy requirement of 835,227.85kWh/year and an associated emission rate of 79,218.75kgCO2/year. These are respectively 8.48% and 54.57% reductions over the baseline calculated previously.

In order to comply with the planning requirements, it is necessary for this development to show measures have been taken to ensure high energy efficiency and best practice with regards to energy consumption inline with the Energy Hierarchy.



Evaluation

The FES Group was instructed by Persimmon Homes Severn Valley to review the performance of the proposed Energy Strategy for the development at Land at Rectory Farm (North), Yatton, North Somerset. The energy strategy was detailed previously but can be best summarised as follows;

- Persimmon Homes Severn Valley proposes an energy strategy, which addresses the two policy concerns of sustainable design and construction: climate change and energy security.
- Persimmon Homes Severn Valley has proposed a fabric first strategy, which aims to achieve long term reductions in CO2 emissions and climate change.
- The proposed fabric and building services specification will permanently reduce regulated emissions by 54.57% and the proposed energy demand by 8.48% This is a significant betterment and demonstrates that the proposed development will have a reduced reliance on national resources (gas and electricity).
- The total number of dwelling for each housetype has been calculated on a pro rota basis as the site plan has not been finalised. Once this has been completed, the report will require revising.

After detailed analysis we can conclude that the preferred energy strategy adheres to the principles and aspirations of sustainable design and construction as advanced by national and local government and the house building industry. We therefore recommend the adoption of the preferred energy strategy by Persimmon Homes Severn Valley

Future Energy Surveys Ltd T/A The FES Group and its staff shall not to be held liable for any damage or loss sustained as a result of using of the information provided in this report. The report is based on drawings and information provided by the client and/or project design team at the time of issue. The information and the drawings provided to us determine the results within the report. If anything changes during the course of the ongoing design or construction, the reduction and calculations will be incorrect. The FES Group will not be held responsible for the implications of such change.

As such this report should be viewed as providing a reasonable assessment of the predicted performance of the development based on current knowledge.

Appendix A





Property Reference	008335 - HT - Thetford	- GF					Issued o	n Dat	e	16/03/2	023	
Assessment Reference	As Designed			Prop	Type Ret	F	HT - Thetf	ord - G	ìF	10/00/2	.020	_
Property	Plot 002, Emerson's Gre	en Parcel 30			. , po		TI - TIICU	oru c	,ı			
. reporty	r lot 002, Emerson's Ore	Sent dioci oo										_
SAP Rating		79 C	DER		5.75		TE	R		12.8	9	
Environmental		96 A	% DER	< TER						55.3	9	
CO ₂ Emissions (t/year)		0.34	DFEE 35.16					TFEE			7	
Compliance Check		See BREL	% DFEE < TFEE							5.17		
% DPER < TPER		10.19	DPER		60.70		TP	ER		67.5	9	
Assessor Details	fr. Benjamin Wood						As	sesso	r ID	P71	7-0001	_
Client	ersimmon Homes Severn \	/allev . null										
SUMMARY FOR INPUT D												
Orientation		West										
Property Tenture		ND										
Transaction Type		6 Suburban					_					
Terrain Type	••						_					
1.0 Property Type		Flat, Semi-Detache	d				_					
Position of Flat	Ground-floor flat											
Which Floor		0										
2.0 Number of Storeys		1										
3.0 Date Built		2022										
4.0 Sheltered Sides		2										
5.0 Sunlight/Shade		Average or unknown										
6.0 Thermal Mass Parameter		Precise calculation										
7.0 Electricity Tariff		Standard										
Smart electricity meter fitted		No										
Smart gas meter fitted		No										
7.0 Measurements								_				
		Ground flo		Loss Peri 31.36 m	meter	Inter	nal Floor 61.48 m²		AV		storey He 36 m	gnt
8.0 Living Area		25.57					m²					
9.0 External Walls												
Description Type	Construction		U-Value (W/m²K)	Kappa G (kJ/m²K) Ar	ea(m²) A	rea F	elter Res	Shelter	0	penings .	Area Calcul Type	
		(one layer of plasterboard) (two layers of plasterboard	0.21 0.26		55.38 4			None well Ac Corridor			Enter Gross Enter Gross	
9.2 Internal Walls	0	ion								Vanc	o Ares	/par 21
Description Ground Floor	Construct	ard on timber frame								Kapp (kJ/m² 9.00	K)	
	Piasterboa	ard on uniber frame								უ.00	115.	.13
10.1 Party Ceilings Description	Construct	tion								Kapp (kJ/m²		(m²)
Party Ceiling	Timber I-jo	oists, carpeted								20.00		.48
11.0 Heat Loss Floors												
Description Type		Construction			U-Val	K)	Shelter C	ode	F	actor (k	(appa Are J/m²K)	
	und Floor - Solid Lowest occupied	Suspended concrete flo	oor, carpeted		0.12	<u>′</u>	None			0.00	75.00 6°	61.48
12.0 Opening Types Description Description	ata Source Type	Glazing		C	Gazing Gap	Filling Type	j G-val		rame Type	Fran Fact		/alue m²K)
Windows BI	anufacturer Solid Door FRC, BSI or Window	Double Low-	E Soft 0.05		-44	., pe	0.46		- , , , ,	. 401	1.1	.10 .30
	ERTASS data FRC, BSI or Window	Double Low-	- 0-# 0 05				0.46	:			1 /	.30

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13.0 Openings							
Name	Opening Type	Location			tation	Area (m²)	Pitch
Front Door Rear/LH Windows	Solid Doors Windows	Wall to Corridor External Wall			est ı East	1.95 1.10	
RH Windows	Windows	External Wall			ı ⊑ası uth	1.10	
Front/LH Windows	Windows	External Wall			West	2.28	
Rear/RH Patio Doors Rear/RH Windows	Patio Doors Windows	External Wall External Wall			n East n East	3.15 1.19	
14.0 Conservatory		None				7	
-		100					
15.0 Draught Proofing						70	
16.0 Draught Lobby		No					
17.0 Thermal Bridging		Calculate Bridges					
17.1 List of Bridges							
Bridge Type E2 Other lintels (including	other steel lintels)	Source Type Independently assessed	Length 7.36	Psi 0.08	Adjusted 0.08	d Reference:	Importe No
E3 Sill		Independently assessed	4.92	0.03	0.03		No
E4 Jamb		Independently assessed	19.80	0.02	0.02		No
E5 Ground floor (normal) E21 Exposed floor (invert	ed)	Independently assessed Independently assessed	31.36 1.89	0.09 -0.01	0.09 -0.01	Half DEFAULT	No No
E7 Party floor between dv	vellings (in blocks of flats)	Non Gov Approved Schemes	29.47	0.08	0.08	Tian BELLICET	No
E16 Corner (normal)	tornal area greater than	Independently assessed Independently assessed	11.79	0.05	0.05		No
E17 Corner (inverted – intexternal area)	ternai area greater than	independently assessed	2.36	-0.04	-0.04		No
Y-value		0.05				W/m²K	
18.0 Pressure Testing		Yes					
J							
Designed AP ₅₀		4.50				m³/(h.m²) @ 50 Pa	
Test Method		Blower Door					
19.0 Mechanical Ventilation							
Mechanical Ventilation						\neg	
Mechanical Ventilati	on System Present	Yes					
Approved Installatio	n	No					
Mechanical Ventilati	on data Type	Database					
Туре		Mechanical extract ventila	ation - decen	tralised			
MV Reference Num	ber	500787					
Duct Type		Flexible					
Wet Rooms		2					
19.1 Mechanical extract ven	tilation - Decentralised						
	Room Type Count						
0.13 In Ro Kitch	oom Fan 0						
	om Fan Other 0						
	Room						
	ict Fan Kitchen 0 ict Fan Other 0						
Wet F	Room						
0.10 Throu Kitch	ugh Wall Fan 1						
0.10 Throu	ugh Wall Fan 1						
20.0 Fans, Open Fireplaces.	r Wet Room						
	,	No					
21.0 Fixed Cooling System		No					
22.0 Lighting		No				\neg	
No Fixed Lighting			ficacy	D.	ower	 Capacity	Count
		Downlights 8	30.00 90.00	P	28 9	2240 810	5 3
24.0 Main Heating 1		Database			-		
-							
Percentage of Heat		100.00				%	
Database Ref. No.		104568				_	
Fuel Type		Electricity					

SAP 10 Online 2.4.5 Page 2 of 4



Recommendations		
31.0 Thermal Store	None	
		l
In Airing Cupboard	No	
Loss	1.23	kWh/day
Cylinder Volume	150.00	L
Insulation Type	Measured Loss	
Independent Time Control	Yes	
Cylinder In Heated Space	Yes	
Cylinder Stat	Yes	
29.0 Hot Water Cylinder	Hot Water Cylinder	
28.3 Waste Water Heat Recovery System		
Description Shower Typ	e Flow Rate Rated Power ([l/min] [kW]	Connected To
28.1 Showers		•
Immersion Only Heating Hot Water	Yes	
Bath Count	1	
Cold Water Source	From mains	
Water use <= 125 litres/person/day	Yes	
Solar Panel	No	[
Waste Water Heat Recovery Storage System Waste Water Heat Recovery Storage System	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Flue Gas Heat Recovery System	No	
SAP Code	901	
28.0 Water Heating Water Heating	Main Heating 1	I
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	se Efficiency Percentage Of Heat Heat Ele Heat Power Ratio	ctrical Fuel Factor Efficiency type
26.0 Heat Networks	None	
25.0 Main Heating 2	None	
Flow Temperature Value	55.00	
Flow Temperature	Enter value	
Heat Emitter	Radiators	
Heating Pump Age	2013 or later	
Is MHS Pumped	Pump in heated space	
PCDF Controls	0	
Controls SAP Code	2207	
System Type	Heat Pump	
Manufacturer	Mitsubishi Electric Europe B.V.	
Model Name	Ecodan 5.0 kW	
In Summer	0.00	
In Winter	0.00	

Tunical Cost Tunical covings per year

Further measures to achieve even higher standards

Ratings after improvement

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iypicai Cost

ıypıcaı savıngs per year

SAP rating 0 0 0

Environmental Impact
0
0

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Property Reference	0083	35 - HT - Thetford -	MF					Issue	ed on Date	16	/03/2023
Assessment Reference	e As D	esigned.			Prop	Type I	Ref	HT - T	hetford - 1	Ē	
Property	Plot 0	004, Emerson's Gre	en Parcel 30								
SAP Rating			79 C	DER		5.41			TER		11.19
Environmental			96 A	% DER	< TER						51.65
CO ₂ Emissions (t/year)			0.33	DFEE		30.8	8		TFEE		30.00
Compliance Check			See BREL	% DFEE	< TFEE						-2.91
% DPER < TPER			2.03	DPER		57.2	7		TPER		58.46
Assessor Details	Mr. Benja	min Wood							Assesso	r ID	P717-0001
Client		on Homes Severn V	allev . null								
SUMMARY FOR INP											
Orientation			West								
Property Tenture			ND								
Transaction Type			6								
Transaction Type Terrain Type			Suburban								
			Flat, Semi-Detache	.d							
1.0 Property Type				ea .							
Position of Flat Which Floor			Mid-floor flat								
			1								
2.0 Number of Storeys			1								
3.0 Date Built			2022								
4.0 Sheltered Sides			2								
5.0 Sunlight/Shade			Average or unknow	'n							
6.0 Thermal Mass Param	eter		Precise calculation								
7.0 Electricity Tariff			Standard								
Smart electricity meter	fitted		No								
Smart gas meter fitted			No								
7.0 Measurements				1141				· 1 E1	oor Area		0411-1
			Ground flo		.oss Per 32.43 m		r 111)	64.28		Avera	ge Storey Hei 2.36 m
8.0 Living Area			25.57						m²		
9.0 External Walls											
Description	Туре	Construction		U-Value (W/m²K) (Kappa (kJ/m²K) Ai	Gross rea(m²)	Nett Area	Shelter Res	Shelter	Open	ings Area Calcula Type
External Wall	Timber Frame		one layer of plasterboard)	0.21	9.00	58.87	(m²) 49.45	0.00	None	9.4	2 Enter Gross
Wall to Corridor	Timber Frame	Timber framed wall (one layer of plasterboard)	0.26	9.00	17.59	15.64	0.40	Stairwell Acc Corridor		5 Enter Gross
9.1 Party Walls											
Description	Туре	Construc	tion				U-Value (W/m²K)			Shelter Res	Shelter
Party Wall	Filled Ca Edge Se		asterboard on both s out sheathing board	sides, twin ti	mber f ra		0.00	20.00	4.46		None
9.2 Internal Walls		-	-								
Description		Construct	ion								(appa Area
Ground Floor		Plasterboa	rd on timber frame								J/m²K) 9.00 121.
10.1 Party Ceilings Description		Constructi	ion								Cappa Area
Party Ceiling		Timber I-joi	ists, carpeted								J/m²K) 20.00 64.2
11.0 Heat Loss Floors Description	Туре	Storey Index	Construction			U-	Value	Shelf	er Code	Shelt	
Exposed Floor	Exposed Floor	•	Other			(V	// m²K) 0.15		lone	Facto 0.00	or (kJ/m²K)
-	Solid	·									

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11.1 Party Floors



Description		Storey	Constru	ction							Area (m²
Party Floor		Index Lowest occupied	Timber I-	joists, carpeted						(kJ/m²K) 20.00	61.48
2.0 Opening Types											
Description	Data Source	Type		Glazing		Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K
Solid Doors Windows	Manufacturer BFRC, BSI or		r	Double Low-E S	oft 0.05	Сар	.,,,,	0.46	.,,,,		1.10
Patio Doors	CERTASS data BFRC, BSI or CERTASS data	Window		Double Low-E S	oft 0.05			0.46			1.30
3.0 Openings											
Name Front Door Rear/LH Windows RH Windows LH Windows Rear/RH Patio Doors Rear/RH Windows Front/LH Windows	Opening Ty Solid Doors Windows Windows Windows Patio Doors Windows Windows		Wal Exte Exte Exte Exte	ation I to Corridor ernal Wall ernal Wall ernal Wall ernal Wall ernal Wall		We North So No	rth ı East ı East	Area 1.9 1.1 1.1 0.6 3.1 1.1 2.2	5 0 0 0 5 5 9	Pi	tch
4.0 Conservatory			Non	e							
5.0 Draught Proofing			100					- %			
6.0 Draught Lobby			No								
7.0 Thermal Bridging 7.1 List of Bridges			Cald	culate Bridges							
Bridge Type E2 Other lintels (includin E3 Sill E4 Jamb E20 Exposed floor (norn E21 Exposed floor (invel E7 Party floor between c E16 Corner (normal) E17 Corner (inverted – in external area) E18 Party wall between P3 Party wall - Intermedi (in blocks of flats) P7 Party Wall - Exposed	nal) rted) dwellings (in block nternal area grea dwellings iate floor betweel	ks of flats) ater than	Independent Indepe	Jently assessed dently assessed	Length 7.93 5.50 21.90 2.95 1.89 61.90 9.43 4.72 4.72 1.89	Psi 0.08 0.03 0.02 0.08 -0.01 0.08 0.05 -0.04 -0.00 0.00	0.08 0.03 0.02 0.08 -0.01 0.08 0.05 -0.04 -0.00 0.00	l Reference	:		Importer No
Y-value			0.09	<u> </u>				W/m²K			
8.0 Pressure Testing			Yes					<u> </u>			
Designed AP ₅₀			4.50	<u> </u>				m³/(h.n	n²) @ 50 F	Pa	
Test Method				ver Door					., @	_	
			Diov	VCI DOOI							
9.0 Mechanical Ventilation Mechanical Ventilation											
Mechanical Ventila		sent	Yes								
Approved Installati	,	50110	No					\exists			
Mechanical Ventila				abase				\exists			
	ilion data Type				. 4:1 - 4:	4		\exists			
Туре				hanical extract ver	nulation - decer	ıtraiised					
MV Reference Nur	nber		500					\exists			
Duct Type			Flex	ible							
Wet Rooms			2								
9.1 Mechanical extract ve											
0.13 In R Kitc 0.11 In R Wet 0.00 In D 0.00 In D	toom Fan hen toom Fan Other Room luct Fan Kitchen luct Fan Other	0									
0.10 Thro											
	ough Wall Fan er Wet Room	1									

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20.0 Fans, Open Fireplaces, Flues



21.0 Fixed Cooling System	No				
22.0 Lighting					
No Fixed Lighting	No				
	Name Downlights Spotlights	Efficacy 80.00 90.00	Power 28 9	Capacity 2240 810	Count 5 4
24.0 Main Heating 1	Database]	
Percentage of Heat	100.00			%	
Database Ref. No.	104568]	
Fuel Type	Electricity				
In Winter	0.00				
In Summer	0.00				
Model Name	Ecodan 5.0 kW			- 	
Manufacturer	Mitsubishi Electr	ic Europe B.V.		- 	
System Type	Heat Pump			Ī	
Controls SAP Code	2207			Ī	
PCDF Controls	0			Ī	
Is MHS Pumped	Pump in heated	space		Ī	
Heating Pump Age	2013 or later	•		Ī	
Heat Emitter	Radiators				
Flow Temperature	Enter value			<u> </u>	
Flow Temperature Value	55.00			<u></u>	
25.0 Main Heating 2	None			<u>-</u>]	
OC 0 Hard Networks	None			 1	
26.0 Heat Networks	None				
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4	se Efficiency	Percentage Of Heat	leat Heat Ele Power Ratio	ectrical Fuel Facto	r Efficiency type
Heat source 5					
28.0 Water Heating Water Heating	Main Hoating 1			٦	
	Main Heating 1			_ 	
SAP Code	901			_ ¬	
Flue Gas Heat Recovery System	No				
Waste Water Heat Recovery Instantaneous System 1	No			_	
Waste Water Heat Recovery Instantaneous System 2	No				
Waste Water Heat Recovery Storage System	No				
Solar Panel	No				
Water use <= 125 litres/person/day	Yes				
Cold Water Source	From mains				
Bath Count	1				
Immersion Only Heating Hot Water	Yes				
28.1 Showers Description Shower Typ	e	Flow F		Connected Connec	ted To
28.3 Waste Water Heat Recovery System					
29.0 Hot Water Cylinder	Hot Water Cylind	der			
Cylinder Stat	Yes]	
Cylinder In Heated Space	Yes				

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31.0 Thermal Store	None	
In Airing Cupboard	No	
Loss	1.23	kWh/day
Cylinder Volume	150.00	L
Insulation Type	Measured Loss	
Independent Time Control	Yes	

Recommendations

Lower cost measures None Further measures to achieve even higher standards

Timbed Cook	Tunical cavings negocia	Ratings af	ter improvement
Typical Cost	Typical savings per year	SAP rating	Environmental Impact
		0	0
		0	0
		Λ	Λ

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Property Reference	C	008335 -	- HT - T	hetford -	- TF						Issi	ued on l	Date		16/03/2	2023	
Assessment Reference	A	As Desig	ned.					Pro	р Туре	Ref	HT -	Thetford	- 2F				
Property	F	Plot 006,	, Emers	on's Gre	een Parcel 30												
SAP Rating					79 C		DER		5.59	9		TER			11.8	38	
Environmental					96 A	Ξi	% DER	< TER							52.9	95	
CO ₂ Emissions (t/year)					0.35	۲ï	DFEE		32.9	97	$\overline{}$	TFEE			33.		
Compliance Check					See BREL	Ħ١	% DFE	E < TFI							0.5		
% DPER < TPER					4.97	Ħ١	DPER		59.0	09	\equiv	TPEF	?		62.		
Assessor Details	Mr. D	enjamin	Mood								_	Asse	eeor	ID		7-000	1
Client				Povorn \	/alley , null							ASSE	3301		F7	7-000	1
SUMMARY FOR INPL																	
Orientation	, i DAI,	A I OIL	. NOW	Balla	West												
					ND												
Property Tenture																	
Transaction Type					6 Suburban												
Terrain Type					Suburban												
1.0 Property Type					Flat, Semi-Detac	ned											
Position of Flat					Top-floor flat												
Which Floor					2												
2.0 Number of Storeys					1												
3.0 Date Built					2023												
4.0 Sheltered Sides					2												
5.0 Sunlight/Shade					Average or unkn	own											
6.0 Thermal Mass Parame	ter				Precise calculation	on											
7.0 Electricity Tariff					Standard												
Smart electricity meter f	fitted				No												
Smart gas meter fitted					No												
7.0 Measurements							Heat) - ui 4 -	14		A		•		24	. I la la la
					Ground f	loo		32.43	Perimete m	er int		Floor Ai 28 m²	ea	AV		.31 m	Heigh
8.0 Living Area					26.65							m²					
9.0 External Walls																	
Description	Type	С	onstruct	ion				Kappa (kJ/m²K)	Gross) Area(m²) Area	Shelter Res	Sh	elter	Oį	penings		alculatio ype
	Timber Fra Timber Fra				one layer of plasterboa two layers of plasterboa		0.21 0.26	9.00 18.00	57.75 17.26	(m²) 48.33 15.31	0.00 0.43	Stairwe	one II Acce idor 3	ess	9.42 1.95		Gross Area
9.1 Party Walls	T			4	-41					11. 1/-1	16			O l1		01-	14
Description Party Wall		d Cavity	with D		lasterboard on botl		des, twin	timber 1	f rame	U-Value (W/m²K) 0.00		K) (m	1²)	Shel Re		Sne No	Iter ne
	Edge	e Sealin	g w	/ith/with	out sheathing boar	d											
9.2 Internal Walls Description			Co	nstruct	tion										Kapp		rea (m²
Ground Floor			Pla	asterboa	ard on timber frame	:									(kJ/m ² 9.00		119.24
10.0 External Roofs																	
Description	Туре		Const	truction	1				Kappa (J/m²K)			Shelte Code			Calcula Typ		pening
Insulated Plane	Externa Roof	al Plane	Plaste	erboard,	insulated at ceiling	lev	el (0.09	9.00	64.28	(m²) 0.00	None	0.	.00	Enter G Are		0.00
11.1 Party Floors																	
Description			Store		nstruction										Kap (kJ/n		krea (m
Party Floor			Lowe		nber I-joists, carpet	ed									20.		64.28

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occupied

		occupied								
12.0 Opening Types										
Description	Data Source	Туре	Glazing		Glazing	Filling	G-value	Frame	Frame	U Value
Solid Doors	Manufacturer	Solid Door			Gap	Type		Туре	Factor	(W/m²K) 1.10
Windows	BFRC, BSI or CERTASS data		Double Low-E Sof				0.46			1.30
Patio Doors	BFRC, BSI or CERTASS data		Double Low-E Sot	ft 0.05			0.46			1.30
13.0 Openings										
Name Front Door Rear/LH Windows RH Windows LH Windows Rear/RH Patio Doors Rear/RH Windows Front/LH Windows	Opening Ty Solid Doors Windows Windows Windows Patio Doors Windows Windows	pe	Location Wall to Corridor External Wall External Wall External Wall External Wall External Wall External Wall		Orient We North Sou Nor South South North	est East uth rth East East	Area 1.9 1.1 1.1 0.6 3.1 1.1	0 0 0 0 50 5	Pi	tch
·			None							
14.0 Conservatory										
15.0 Draught Proofing			100							
16.0 Draught Lobby			No							
17.0 Thermal Bridging			Calculate Bridges							
17.1 List of Bridges Bridge Type E2 Other lintels (includi E3 Sill E4 Jamb E7 Party floor between E10 Eaves (insulation a E12 Gable (insulation a E16 Corner (normal) E17 Corner (inverted – external area) E18 Party wall between	dwellings (in block at ceiling level) t ceiling level) internal area grea	els) cs of flats) ter than	Source Type Independently assessed	Length 7.93 5.50 21.90 32.43 17.09 15.34 9.25 4.62	Psi 0.08 0.03 0.02 0.08 0.04 0.04 0.05 -0.04	0.08 0.03 0.02 0.08 0.04 0.04 0.05 -0.04	d Reference	: :		Imported No No No No No No No No
P3 Party wall - Intermed (in blocks of flats) P4 Party wall - Roof (in:		· ·	Table K1 - Default Independently assessed	1.89 1.89	0.00	0.00	ACD			No No
Y-value	outure of the second		0.04			0.02	W/m²K			
			0.01							
18.0 Pressure Testing			Yes							
Designed AP ₅₀			4.50				m³/(h.n	n²) @ 50 P	а	
Test Method			Blower Door							
19.0 Mechanical Ventilation	on									
Mechanical Ventilation	n									
Mechanical Ventil	ation System Pres	sent	Yes							
Approved Installa	tion		No							
Mechanical Ventil	ation data Type		Database							
Туре			Mechanical extract vent	ilation - decer	ntralised					
MV Reference Nu	ımber		500787							
Duct Type			Flexible							
Wet Rooms			3							
19.1 Mechanical extract v	entilation - Dece	ntralised					_ _			
0.13 In I Kit Kit 0.11 In I We 0.00 In I 0.00 In I We 0.10 Th Kit 0.10 Th		0								
20.0 Fans, Open Fireplace										
			No				\neg			
21.0 Fixed Cooling System			INU							

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22.0 Lighting					
No Fixed Lighting	No Name Downlights Spotlights	Efficacy 80.00 90.00	Power 28 9	Capacity 2240 810	Count 5 5
24.0 Main Heating 1	Database				
Percentage of Heat	100.00			%	
Database Ref. No.	104568			Ħ	
Fuel Type	Electricity			Ħ	
In Winter	0.00			Ħ	
In Summer	0.00			Ħ	
Model Name	Ecodan 5.0 kW			Ħ	
Manufacturer	Mitsubishi Electri	c Europe B.V.		Ħ	
System Type	Heat Pump			一	
Controls SAP Code	2207			一	
PCDF Controls	0			Ħ	
Is MHS Pumped	Pump in heated s	space		Ħ	
Heating Pump Age	2013 or later			\exists	
Heat Emitter	Radiators			\exists	
Flow Temperature	Enter value			Ħ	
Flow Temperature Value	55.00				
25.0 Main Heating 2	None				
5					
26.0 Heat Networks Heat Source Fuel Type Heating U	None se Efficiency	Percentage Of Heat	leat Heat E Power Ratio	Electrical Fuel Facto	or Efficiency typ
			Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5			Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5			Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 88.0 Water Heating	se Efficiency		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 8.0 Water Heating Water Heating	se Efficiency Main Heating 1		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 8.0 Water Heating Water Heating SAP Code	Main Heating 1		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 8.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System	Main Heating 1 901 No		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1	Main Heating 1 901 No No		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2	Main Heating 1 901 No No		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System	Main Heating 1 901 No No No		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel	Main Heating 1 901 No No No No		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day	Main Heating 1 901 No No No No Yes		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source	Main Heating 1 901 No No No No No From mains		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	Main Heating 1 901 No No No No Yes From mains 1 Yes	Heat	Power Ratio	Electrical Fuel Factor	
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 5 R.O Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	Main Heating 1 901 No No No No Yes From mains 1 Yes	Heat Flow F	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type	Main Heating 1 901 No No No No Yes From mains 1 Yes	Flow F	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 88.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 88.1 Showers Description Shower Type 88.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No No Yes From mains 1 Yes	Flow F	Power Ratio		
Heat Source 1 Heat source 2 Heat source 3 Heat source 5 88.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 88.1 Showers Description Shower Type 88.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No Yes From mains 1 Yes Hot Water Cylinde	Flow F	Power Ratio		
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat	Main Heating 1 901 No No No No No Yes From mains 1 Yes Hot Water Cylind Yes	Flow F	Power Ratio		

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31.0 Thermal Store	None	
		<u> </u>
In Airing Cupboard	No	
Loss	1.23	kWh/day
Cylinder Volume	150.00	L

Recommendations Lower cost measures None

Further measures to achieve even higher standards

T ! ! O 4	T !	Ratings af	ter improvement
Typical Cost	Typical savings per year	SAP rating	Environmental Impact
		0	0
		0	0
		0	0

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Property Reference	000	3517 - HT	- 2A - END						Issu	ıed on D	ate	16/0	3/2023	
Assessment Reference	As	Designed	t			Pro	ор Туре	Ref	HT - 2	2A - END	ı			
Property	Plo	t , Land I	Nr Rectory F	arm										
SAP Rating				78 C	DER		5.2	6		TER		1	.25	
Environmental				96 A	% DER	< TFR		.0		1210			3.24	
CO ₂ Emissions (t/year)				0.4	DFEE	· · ILI	33.	07		TFEE			5.01	
Compliance Check				See BREL	% DFE	E < TE		01					27	
% DPER < TPER				5.86	DPER		55.	F0		TPER			3.98	
// DFER > IFER				5.60	DFLK		55.	32		IFER		30	0.90	
Assessor Details	Mr. Ben	jamin Wo	ood							Asses	sor ID	Р	717-00	01
Client	Persimn	non Hom	es Severn V	alley , null										
SUMMARY FOR INPU	JT DATA I	FOR: N	ew Build (As Designed)										
Orientation				East										
Property Tenture				ND										
Transaction Type				6					\equiv					
Terrain Type				Suburban										
1.0 Property Type				House, End-Terrace	<u> </u>									
2.0 Number of Storeys				2	<u></u>				\equiv					
3.0 Date Built				2023					==					
4.0 Sheltered Sides				2										
					•									
5.0 Sunlight/Shade	-to-			Average or unknow	1									
6.0 Thermal Mass Parame	eter			Precise calculation										
7.0 Electricity Tariff				Standard										
Smart electricity meter	fitted			No										
Smart gas meter fitted				No										
7.0 Measurements														
				Ground floo 1st Store	or:	17.85 17.85		er In	39.7	Floor Are '5 m² '5 m²	ea A	verage	2.34 m 2.69 m	
8.0 Living Area				16.03						m²				
9.0 External Walls														
Description	Туре	Cons	truction		U-Value			Nett	Shelter Res	Shel	ter	Opening	s Area	Calculation
External Wall	Timber Frame	Timbe	er framed wall (one layer of plasterboard)	(vv/m-k) 0.21	9.00	() Area(m 89.71	²) Area (m²) 79.18	0.00	Non	10	10.53	Enter	Type Gross Area
9.1 Party Walls	Timber Frame	Timbe	or iramica waii (one layer of plasterboardy	0.21	3.00	05.71	75.10	0.00	1401		10.55	Linter	01033 7108
Description	Туре		Construc	tion				U-Value	. Карр	a Are	a Sh	elter	Sh	elter
Party Wall	Filled C Edge S	Cavity wit Sealing		asterboard on both s out sheathing board	des, twin	timber	f rame	(W/m²K 0.00) (kJ/m² 20.0			es	N	one
9.2 Internal Walls														
Description			Constructi	ion										Area (m²)
Ground Floor First Floor				rd on timber frame rd on timber frame								` 9.	n²K) 00 00	58.78 88.77
10.0 External Roofs														
Description	Туре	C	onstruction					Gross Area(m²)	Nett Area	Shelter Code			ılation pe	Opening
Insulated Plane	External F Roof	Plane Pl	asterboard, i	nsulated at ceiling le	-).09	9.00	39.75	(m²) 0.00	None		Enter	Gross rea	0.00
10.2 Internal Ceilings														
Description Ground Floor		Stor Low	ey est occupied	Construction Plasterboard ceili	ng, carpet	ed chip	board fl	oor						(m²) .75
11.0 Heat Loss Floors														
Description	Туре		orey Index	Construction				J-Value W/m²K)	She	Iter Code		Shelter Factor	(kJ/m²ł	
Ground Floor	Ground Floo	r - Solid Lo	west occupied	Suspended concrete flo	or, carpeted	l		0.12		None		0.00	75.00	39.75

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Description		Storey	Const	ruction							Area (m²)
First Floor		Index	Plaste	rboard ceiling, carpet	ed chipboard fl	oor				(kJ/m²K) 9.00	39.75
12.0 Opening Types											
Description	Data Source	Type		Glazing		Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Solid Door Windows	Manufacturer BFRC, BSI or	Window	r	Double Low-E So	oft 0.05	Cup	.,,,,	0.46	.,,,,	. 40.0.	1.10 1.30
Patio Doors	CERTASS dat BFRC, BSI or	Window		Double Low-E So	oft 0.05			0.46			1.30
Half-Glazed Door	CERTASS dat Manufacturer		ed Doo	Double Low-E So	oft 0.05			0.63		0.70	1.60
13.0 Openings											
Name Front Door Front Windows Rear Door Rear Windows	Opening Ty Solid Door Windows Half-Glazed Windows	•	E E	ocation xternal Wall xternal Wall xternal Wall xternal Wall		Orient Ea Ea We We	st st est	Area (2.1 3.3 2.1 2.8	3 8 3	Pi	tch
14.0 Conservatory			N	one				7			
15.0 Draught Proofing				00				- %			
16.0 Draught Lobby			N					j			
17.0 Thermal Bridging			С	alculate Bridges				 7			
17.1 List of Bridges											
E2 Other lintels (including as 3 sill) E4 Jamb E5 Ground floor (normate) E6 Intermediate floor with the side of th	I) thin a dwelling t ceiling level) t ceiling level) dwellings floor diate floor within a	, ı dwelling	Indeperindent Indeperind	endently assessed endently end	7.25 5.22 20.40 17.85 17.85 9.26 8.58 10.05 10.05 8.58 8.58	0.08 0.03 0.02 0.09 0.03 0.04 0.05 -0.00 0.03 0.00	0.08 0.03 0.02 0.09 0.03 0.04 0.05 -0.00 0.03 0.00				No N
Y-value			0.	03				W/m²K			
18.0 Pressure Testing			Y	es							
Designed AP ₅₀			4.	50				m³/(h.m	n²) @ 50 P	а	
Test Method			В	ower Door							
19.0 Mechanical Ventilation	on										
Mechanical Ventilation	1										
Mechanical Ventila	ation System Pre	sent	Y	es							
Approved Installat	tion		N	0							
Mechanical Ventila	ation data Type		D	atabase							
Туре			M	echanical extract ven	tilation - decen	tralised					
MV Reference Nu	mber		50	00787							
Duct Type			F	exible				Ħ			
Wet Rooms			3								
19.1 Mechanical extract ve	entilation - Dece	ntralised									
0.13 In F Kito		Count 0									
We	t Room Duct Fan Kitchen										
	Duct Fan Other										
	t Room										
0.10 We	ough Wall Fan chen	1									

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20.0 Fans, Open Fireplaces, Flues



21.0 Fixed Cooling System	No			<u> </u>	
22.0 Lighting					
No Fixed Lighting	No				
	Name Downlights Spotlights	Efficacy 80.00 18.00	Power 28 5	Capacity 2240 90	Count 7 5
24.0 Main Heating 1	Database				
Percentage of Heat	100.00			%	
Database Ref. No.	104568				
Fuel Type	Electricity				
In Winter	0.00				
In Summer	0.00				
Model Name	Ecodan 5.0 kW				
Manufacturer	Mitsubishi Electr	ric Europe B.V.		Ħ	
System Type	Heat Pump			Ħ	
Controls SAP Code	2207			Ħ	
PCDF Controls	0			Ħ	
Is MHS Pumped	Pump in heated	space		Ħ	
Heating Pump Age	2013 or later			\exists	
Heat Emitter	Radiators			\exists	
Flow Temperature	Enter value			\exists	
Flow Temperature Value	55.00			\exists	
				<u> </u>	
	None None See Efficiency			lectrical Fuel Facto	or Efficiency ty
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4	None	Percentage Of Heat	leat Heat E Power Ratio	lectrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	None		Power	lectrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating	None		Power	lectrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	None Se Efficiency		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code	None Se Efficiency Main Heating 1		Power	lectrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System	None Se Efficiency Main Heating 1		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1	None Se Efficiency Main Heating 1 901 No No		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2	None Se Efficiency Main Heating 1 901 No No		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System	Main Heating 1 901 No No No		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel	Main Heating 1 901 No No No No		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day	Main Heating 1 901 No No No No No Yes		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source	Main Heating 1 901 No No No No		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count	Main Heating 1 901 No No No No No Yes From mains 1		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	Main Heating 1 901 No No No No No Yes		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	None Main Heating 1 901 No No No No No From mains 1 Yes	Heat	Power Ratio	lectrical Fuel Factor	
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type	None Main Heating 1 901 No No No No No From mains 1 Yes	Heat Flow F	Power Ratio		
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	None Main Heating 1 901 No No No No No Yes From mains 1 Yes	Heat Flow F	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type 28.3 Waste Water Heat Recovery System	None Main Heating 1 901 No No No No No From mains 1 Yes	Heat Flow F	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type 28.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No No Yes From mains 1 Yes Hot Water Cyline	Heat Flow F	Power Ratio		

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Insulation Type	Measured Loss	
Cylinder Volume	150.00	L
Loss	1.23	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations Lower cost measures None

Further measures to achieve even higher standards

Typical Cost	Tomical cardena nancosa	Ratings after improvement						
	Typical savings per year	SAP rating	Environmental Impact					
£4,000 - £6,000	£66	B 81	A 96					
£3,500 - £5,500	£158	B 87	A 97					
		0	n					

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Property Reference	008517 - HT - 2A - MID Iss								Issi	ued on D	ate	16/0	6/03/2023		
Assessment Reference	As	Desig	ned			Pro	ор Туре	Ref	HT - :	T - 2A - MID					
Property	Plot , Land Nr Rectory Farm														
SAP Rating				80 C	DER		4.7	7		TER		1/).12		
Environmental				96 A		R < TER		1		1210			2.87		
CO ₂ Emissions (t/year)				0.36	DFEE		26.	90	_	TFEE			9.55		
Compliance Check				See BREL		E < TF		.00					32		
% DPER < TPER				4.48	DPER	` ' ' '	50.	5.A		TPER			2.91		
// DFER > IFER				4.40	DFLK		50.	.54		IFER		0.	2.91		
Assessor Details	Mr. Ben	jamin	Wood							Asses	sor ID	Р	717-00	01	
Client	Persimn	non H	omes Severn V	alley , null											
SUMMARY FOR INP	JT DATA I	FOR:	New Build ((As Designed)											
Orientation				East											
Property Tenture				ND											
Transaction Type				6											
Terrain Type				Suburban					$\overline{}$						
1.0 Property Type				House, Mid-Terrace	;										
2.0 Number of Storeys				2											
3.0 Date Built				2021											
4.0 Sheltered Sides				3											
5.0 Sunlight/Shade				Average or unknow	n										
6.0 Thermal Mass Parame	oter			Precise calculation											
				Treeise calculation											
7.0 Electricity Tariff				Standard											
Smart electricity meter	fitted			No											
Smart gas meter fitted				No											
7.0 Measurements													<u> </u>		
				Ground floo 1st Store	or:	9.26 9.26		er in	39.7	Floor Are 75 m² 75 m²	a A	verage	2.34 m 2.69 m		
8.0 Living Area				16.03						m²					
9.0 External Walls															
Description	Туре	C	onstruction			Kappa	Gross		Shelter Res	Shel	ter	Opening	s Area	Calculation Type	
External Wall	Timber Frame	. Ti	mber framed wall (c	one layer of plasterboard)	0.21	9.00	46.57	(m²) 36.04	0.00	Nor	e	10.53	Enter	Gross Area	
9.1 Party Walls			or named man (s	silo iayo. o. piaoto.zoaia,										0.000700	
Description	Туре		Construc	tion				U-Value	. Карр	a Are	a Sh	elter	Sh	elter	
Party Wall	Filled C Edge S			asterboard on both s out sheathing board	ides, twin	timber	f rame	(W/m²K 0.00	(kJ/m ²) (20.0			es	N	one	
9.2 Internal Walls															
Description			Constructi	ion									opa n²K)	Area (m²)	
Ground Floor First Floor				rd on timber frame rd on timber frame								` 9.	00	58.78 88.77	
10.0 External Roofs			_				_	_						_	
Description	Туре		Construction					Gross Area(m²)	Nett Area	Shelter Code			ılation /pe	Opening	
Insulated Plane	External F Roof	Plane	Plasterboard, i	nsulated at ceiling le	-	0.09	9.00	39.75	(m²) 0.00	None		Enter	Gross rea	0.00	
10.2 Internal Ceilings															
Description Ground Floor			itorey owest occupied	Construction Plasterboard ceili	ng, carpe	ted chip	board fl	oor						(m²) .75	
11.0 Heat Loss Floors	_														
Description	Туре		Storey Index	Construction				J-Value W/m²K)	She	Iter Code		Shelter Factor	(kJ/m²l		
Ground Floor	Ground Floo	r - Solid	Lowest occupied	Suspended concrete flo	oor, carpete	t		0.11		None		0.00	75.00	39.75	

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11.2 Internal Floors		04	•	-44!						1/	A (2)
Description		Storey Index		struction						(kJ/m²K)	
First Floor			Plas	terboard ceiling, carpete	d chipboard flo	oor				9.00	39.75
12.0 Opening Types Description	Data Source	Туре		Glazing		Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Solid Door Windows	Manufacturer BFRC, BSI or	Window	r	Double Low-E So	ft 0.05		-71	0.46	-31		1.10 1.30
Patio Doors	CERTASS dat BFRC, BSI or CERTASS dat	Window		Double Low-E So	ft 0.05			0.46			1.30
Half-Glazed Door	Manufacturer	Half Glaz	ed Do	oor Double Low-E So	ft 0.05			0.63		0.70	1.60
13.0 Openings Name	Opening Ty	'ne		Location		Orient	ation	Area	(m²)	Di	tch
Front Door	Solid Door	pe		External Wall		Ea	st	2.1	3		ton
Front Windows Rear Door	Windows Half-Glazed	Door		External Wall External Wall		Ea We		3.3 2.1			
Rear Windows	Windows	Bool		External Wall		We		2.8			
14.0 Conservatory				None							
15.0 Draught Proofing				100				%			
16.0 Draught Lobby				No							
17.0 Thermal Bridging				Calculate Bridges							
17.1 List of Bridges			e	rce Type	l anath	Psi	Adius4s-l	Dofores			lmno=4o-4
Bridge Type E2 Other lintels (includin	ng other steel linte	els)		pendently assessed	Length 7.25	0.08	0.08	Reference) :		Imported No
E3 Sill		,		pendently assessed	5.22	0.03	0.03				No
E4 Jamb E5 Ground floor (normal)			pendently assessed pendently assessed	20.40 9.26	0.02 0.09	0.02 0.09				No No
E6 Intermediate floor wit			Inde	pendently assessed	9.26	0.03	0.03				No
E10 Eaves (insulation at E18 Party wall between	dwellings			pendently assessed pendently assessed	9.26 20.11	0.04 -0.00	0.04 -0.00				No No
P1 Party wall - Ground fl	loor	de e e Iller e	Inde	pendently assessed	17.16	0.03	0.03				No
P2 Party wall - Intermed P4 Party wall - Roof (ins				pendently assessed pendently assessed	17.16 17.16	0.00 0.02	0.00 0.02				No No
Y-value				0.03				W/m²K			
18.0 Pressure Testing				Yes							
Designed APso				4.50				m³/(h.m	n²) @ 50 P	a	
Test Method				Blower Door							
19.0 Mechanical Ventilatio	n										
Mechanical Ventilation	l										
Mechanical Ventila	ation System Pres	sent		Yes							
Approved Installati	ion			No							
Mechanical Ventila	ation data Type			Database				7			
Туре				Mechanical extract vent	ilation - decen	tralised		Ħ			
MV Reference Nur	mber			500787				╡			
Duct Type	····· ••			Flexible				╡			
Wet Rooms				3				\dashv			
19.1 Mechanical extract ve											
0.13 In R	Room Fan	Count 0									
	hen Room Fan Other	1									
Wet	t Room										
	ouct Fan Kitchen Ouct Fan Other										
	t Room	U									
	ough Wall Fan hen	1									
0.10 Thro	ough Wall Fan er Wet Room	1									
20.0 Fans, Open Fireplace											
	•			No							
21.0 Fixed Cooling System	1			No							



22.0 Lighting					
No Fixed Lighting	No	F-60	D	0	0
	Name Downlights Spotlights	80.00 90.00	Power 28 9	Capacity 2240 810	Count 8 5
24.0 Main Heating 1	Database				
Percentage of Heat	100.00			%	
Database Ref. No.	104568				
Fuel Type	Electricity				
In Winter	0.00				
In Summer	0.00				
Model Name	Ecodan 5.0 kW				
Manufacturer	Mitsubishi Electric Eu	rope B.V.			
System Type	Heat Pump				
Controls SAP Code	2207				
PCDF Controls	0				
Is MHS Pumped	Pump in heated space	е			
Heating Pump Age	2013 or later				
Heat Emitter	Radiators				
Flow Temperature	Enter value				
Flow Temperature Value	55.00				
	None				
25.0 Main Heating 2	<u> </u>				
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2	None Se Efficiency Pero	centage Of He Heat	at Heat E Power Ratio	Electrical Fuel Facto	r Efficiency typ
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5			Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating	se Efficiency Perd		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating	se Efficiency Pero		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code	Se Efficiency Pero		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System	Se Efficiency Pero Main Heating 1 901 No		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1	Main Heating 1 901 No		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2	Main Heating 1 901 No No		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System	Main Heating 1 901 No No No		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel	Main Heating 1 901 No No No No		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day	Main Heating 1 901 No No No No No Yes		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source	Main Heating 1 901 No No No No		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count	Main Heating 1 901 No No No No No Yes From mains 1		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	Main Heating 1 901 No No No No No Yes		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	Main Heating 1 901 No No No No No Yes From mains 1 Yes	Heat	Power Ratio	Electrical Fuel Factor	
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Typ	Main Heating 1 901 No No No No No Yes From mains 1 Yes	Heat	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type 28.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No No Yes From mains 1 Yes	Heat	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Typ	Main Heating 1 901 No No No No Yes From mains 1 Yes	Heat	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Typ 28.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No Yes From mains 1 Yes Hot Water Cylinder	Heat	Power Ratio		
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Typ 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat	Main Heating 1 901 No No No No Yes From mains 1 Yes Hot Water Cylinder Yes	Heat	Power Ratio		



31.0 Thermal Store	None	
		<u> </u>
In Airing Cupboard	No	
Loss	1.23	kWh/day
Cylinder Volume	150.00	L

Recommendations Lower cost measures None

Further measures to achieve even higher standards

Tuninal Cont	Tomical accions nancian	Ratings at	ter improvement
Typical Cost	Typical savings per year	SAP rating	Environmental Impact
£4,000 - £6,000	£66	B 82	A 96
£3,500 - £5,500	£156	B 89	A 98
		0	0



Property Reference		008517	- HT - 4A - Semi						Issu	ed on D	ate	16/03/2	2023
Assessment Reference	е	As Desi	gned - As			Pro	р Туре	Ref	HT - V	Vhiteleat	f - DET		
Property		Plot , La	nd Nr Rectory F	arm									
SAP Rating				80 C	DER		4.2	3		TER		9.80	
Environmental				96 A	% DER	∠ TED	4.2	J				56.5	
CO ₂ Emissions (t/year)				0.46	DFEE	· ILK	32.	- 1		TFEE		32.5	
Compliance Check					% DFE	E / TEE) I					
% DPER < TPER				See BREL	DPER		44.	21		TPER		51.2	
// DFLK > IFLK				12.35	DFLK		44.	91		IFER		31.2	.4
Assessor Details	Mr. E	Benjamir	n Wood							Asses	sor ID	P71	7-0001
Client	Pers	immon l	Homes Severn V	alley , null									
SUMMARY FOR INP	UT DAT	A FOR	: New Build	(As Designed)									
Orientation				East									
Property Tenture				ND									
Transaction Type				6									
Terrain Type				Suburban									
1.0 Property Type				House, Semi-Detach	ned				一				
2.0 Number of Storeys				3					一				
3.0 Date Built				2023					一				
4.0 Sheltered Sides				2									
5.0 Sunlight/Shade				Average or unknown	1				\equiv				
6.0 Thermal Mass Param	eter			Precise calculation									
7.0 Electricity Tariff				Standard									
-	fitted			No					=				
Smart electricity meter Smart gas meter fitted	iiileu			No					=				
				INO									
7.0 Measurements				Ground floo 1st Store 2nd Store	r: y:	Loss P 18.32 18.32 18.32	m m	er Int	41.3 41.3	loor Are 0 m² 0 m² 7 m²	ea <i>F</i>	2.	Storey Heiç .34 m .68 m .98 m
8.0 Living Area				14.91						m²			
9.0 External Walls Description	Туре	(Construction		U-Value (W/m²K)		Gross Area(m²		Shelter Res	Shel	ter	Openings	Area Calcula Type
External Wall Dormer Wall Wall to Roof Void	Timber Fr Timber Fr Timber Fr	ame -	Timber framed wall (one layer of plasterboard) one layer of plasterboard) one layer of plasterboard)	0.21 0.44 0.11	9.00 9.00 9.00	108.20 4.38 14.55	96.54 3.42 14.55	0.00 0.00 0.50	Nor Nor Room I	ne	0.96	Enter Gross A Enter Gross A Enter Gross A
9.1 Party Walls	_	_	0	4:				1137-1	IZ -		_ ^,	-14 <i>-</i>	Ol P
Description	Тур		Construc					U-Value (W/m²K)	(kJ/m²	K) (m²) F	elter Res	Shelter
Party Wall		ed Cavity ge Sealin		asterboard on both sid out sheathing board	des, twin	timber f	rame	0.00	20.00	57.3	31		None
9.2 Internal Walls Description			Construct	ion								Карр	
Ground Floor First Floor Second Floor			Plasterboa	rd on timber frame rd on timber frame rd on timber frame								(kJ/m² 9.00 9.00 9.00	62.2 75.5
10.0 External Roofs													
Description	Туре		Construction			/alue K /m²K)(k		Gross Area(m²)	Nett Area (m²)		Shelte Facto		ationOpeni e
Insulated Slope	Extern Roof	al Slope	Plasterboard,	insulated slope	0	.15	9.00	17.21	0.54	None	0.00	Enter G Area	
Dormer Flat Roof		al Flat	Plasterboard,	insulated flat roof	0	.33	9.00	1.53	0.00	None	0.00		ross 0.00
1st Sheltered Ceiling		al Plane	Plasterboard,	insulated at ceiling lev	rel C	.11	9.00	11.83	0.00	None	0.00		ross 0.00
2ns Sheltered Ceiling		al Plane	Plasterboard,	insulated at ceiling lev	rel 0	.27	9.00	15.76	0.00	Room	0.50	Enter G	



	Roof							In Roof		Area	
10.2 Internal Ceilings											
Description Ground Floor Second Floor	L	torey owest occi 1	upied	Construction Plasterboard ceiling, ca Plasterboard ceiling, ca							ea (m²) 41.30 29.47
11.0 Heat Loss Floors Description	Туре	Storey Inde	x	Construction		U-Val (W/m		Shelter Code		nelter Kap actor (kJ/r	pa Area (n
Ground Floor	Ground Floor - Solid	Lowest occu	pied	Suspended concrete floor, car	peted	0.12		None		0.00 75.	
I1.2 Internal Floors Description		Storey Index	Con	struction						Kappa (kJ/m²K	Area (m
First Floor Second Floor		mucx		terboard ceiling, carpeted terboard ceiling, carpeted						9.00 9.00	41.30 29.47
12.0 Opening Types Description	Data Source	Туре		Glazing		Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K
Solid Doors Windows	Manufacturer BFRC, BSI or CERTASS data		or	Double Low-E Soft	0.05	•		0.46	·.		1.10 1.30
Patio Doors	BFRC, BSI or CERTASS data	Window		Double Low-E Soft	0.05			0.46			1.30
Half-Glazed Doors Roof Window		Window Roof Win	dow	Double Low-E Soft Double Low-E Soft				0.63 0.63		0.70 0.70	1.10 1.30
I3.0 Openings Name Front Door Front Windows Rear Windows Rear Doors Front Window Rear Roof Window	Opening Ty Solid Doors Windows Windows Half-Glazed Windows Roof Windoo	Doors		Location External Wall External Wall External Wall External Wall Dormer Wall Insulated Slope		Orienta Eas Eas We We Eas We	st st st st	Area (2.11 3.55 3.88 2.11 0.96 0.54	3 2 3 3		itch 45
4.0 Conservatory				None							
15.0 Draught Proofing				100				<u> </u>			
16.0 Draught Lobby				No							
17.0 Thermal Bridging 17.1 List of Bridges				Calculate Bridges							
Bridge Type E2 Other lintels (including E3 Sill E4 Jamb E5 Ground floor (normal) E6 Intermediate floor with E16 Corner (normal) E13 Gable (insulation at E11 Eaves (insulation at E18 Party wall between of P1 Party wall - Ground floor P2 Party wall - Roof (insulation R1 Head of roof window R2 Sill of roof window R3 Jamb of roof window R4 Ridge (vaulted ceiling R7 Flat ceiling (inverted) R9 Roof to wall (flat ceiling E16 Corner (normal)	hin a dwelling rafter level) rafter level) dwellings oor ate floor within a ulation at rafter le	dwelling	Inde Inde Inde Inde Inde Inde Inde Inde	rce Type pendently assessed	Length 8.20 6.17 22.80 18.32 36.65 10.32 11.32 10.32 8.01 16.01 11.32 1.46 1.46 5.16 6.59 4.28 1.27	Psi 0.08 0.03 0.02 0.09 0.03 0.05 -0.00 0.02 -0.00 0.01 0.06 0.06 0.06 0.012 -0.02 0.02 0.18	Adjuste 0.08 0.03 0.02 0.09 0.03 0.05 -0.00 0.02 -0.00 0.03 0.05 0.06 0.06 0.10 -0.02 -0.02 0.18	d Reference			Importe No
Y-value				0.03				W/m²K			
8.0 Pressure Testing				Yes							
Designed AP ₅₀			Ì	4.50				m³/(h.m	²) @ 50 F	Pa	
Test Method				Blower Door							
9.0 Mechanical Ventilation	า										
Mechanical Ventilation								_			
Mechanical Ventila	tion System Pres	sent		Yes							
Approved Installation	on			No							
			i								
Mechanical Ventila	tion data Type			Database							



MV Reference Number	500787				
Duct Type	Flexible				
Wet Rooms	4			7	
19.1 Mechanical extract ventilation - Decentralised					
SFP Fan/Room Type Count					
0.13 In Room Fan 0 Kitchen					
0.11 In Room Fan Other 2 Wet Room					
0.00 In Duct Fan Kitchen 0 0.00 In Duct Fan Other 0					
Wet Room 0.10 Through Wall Fan 1					
Kitchen					
0.10 Through Wall Fan 1 Other Wet Room					
20.0 Fans, Open Fireplaces, Flues					
21.0 Fixed Cooling System	No				
22.0 Lighting				_	
No Fixed Lighting	No				
	Name Downlights Spotlights	Efficacy 80.00 90.00	Power 28 9	Capacity 2240 810	Count 11 5
24.0 Main Heating 1	Database				
Percentage of Heat	100.00			%	
Database Ref. No.	104640				
Fuel Type	Electricity				
In Winter	0.00				
In Summer	0.00				
Model Name	Ecodan 8.5 kW				
Manufacturer	Mitsubishi Electric	Europe B.V.			
System Type	Heat Pump				
Controls SAP Code	2207				
PCDF Controls	0				
Is MHS Pumped	Pump in heated s	pace			
Heating Pump Age	2013 or later				
Heat Emitter	Radiators				
Flow Temperature	Enter value				
Flow Temperature Value	55.00				
25.0 Main Heating 2	None				
26.0 Heat Networks	None			 	
Heat Source Fuel Type Heating U		Percentage Of H Heat	eat Heat E Power	 lectrical Fuel Facto	or Efficiency type
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5			Ratio		
28.0 Water Heating					
Water Heating	Main Heating 1				
SAP Code	901				
Flue Gas Heat Recovery System	No				
Waste Water Heat Recovery Instantaneous System 1	No				
Waste Water Heat Recovery Instantaneous System 2	No				
Waste Water Heat Recovery Storage System	No			\neg	



Solar Panel				No					_		
Water use <	= 125 litres/pe	erson/day		Yes							
Cold Water	Source			From ma	ins						
Bath Count				1							
Immersion (Only Heating F	lot Water		Yes							
28.1 Showers											
Description	1		Shower Typ	e			w Rate Rat /min]	ed Power [kW]	Connected Co	onnected To	
28.3 Waste Wa	ter Heat Reco	very System									
29.0 Hot Water	Cylinder			Hot Wate	r Cylinder						
Cylinder Sta	nt			Yes							
Cylinder In I	Heated Space			Yes							
Independen	t Time Control	I		Yes							
Insulation T	уре			Measured	d Loss						
Cylinder Vol	lume			150.00] L		
Loss				1.23					kWh/day		
In Airing Cu	pboard			No							
31.0 Thermal S	tore			None							
34.0 Small-sca	le Hydro			None							
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Recommendat Lower cost None	ions measures				- Juli	Jui	Aug	Зер		1100	

Further measures to achieve even higher standards

Ratings after improvement

SAP rating Environmental Impact

B 82 A 96
B 88 A 97
0 0 Typical savings per year Typical Cost £4,000 - £6,000 £3,500 - £5,500 £67 £169

Page 4 of 4 SAP 10 Online 2.4.5



Property Reference	00	8517	- HT - Arden - EN	ND					İssı	ed on D	ate	16/0	3/2023	
Assessment Reference	As	Desig	gned - As			Pr	ор Туре	Ref	HT - /	Arden - E	ND			
Property	Ple	ot , La	nd Nr Rectory Fa	arm										
SAP Rating				78 C	DER		6.2	20		TER		1	1.46	
Environmental				96 A	% DER	/ TEE		19		ILK			5.50	
CO ₂ Emissions (t/year)				0.3	DFEE	· · ILI	36	92		TFEE				
Conpliance Check					% DFE	E / TE		.82		1111-1-1			9.03	
% DPER < TPER				See BREL	DPER	E > 1F		F.4		TPER			65	
% DPER < IPER				12.62	DPER		66	.54		IPER		10	5.15	
Assessor Details	Mr. Bei	njamin	Wood							Asses	sor ID	Р	717-000)1
Client	Persim	mon F	lomes Severn V	alley , null										
SUMMARY FOR INPL	JT DATA	FOR	: New Build (As Designed)										
Orientation				East										
Property Tenture				ND										
Transaction Type				6										
Terrain Type				Suburban					=					
1.0 Property Type				House, End-Terrace					=					
2.0 Number of Storeys				2										
3.0 Date Built				2022										
4.0 Sheltered Sides				2										
5.0 Sunlight/Shade	-4			Average or unknown	1									
6.0 Thermal Mass Parame	eter			Precise calculation										
7.0 Electricity Tariff				Standard										
Smart electricity meter	fitted			No										
Smart gas meter fitted				No										
7.0 Measurements														
				Ground floo 1st Store	r:	14.20 14.20		er In	25.1	loor Are 4 m² 4 m²	a A	verage	2.33 m 2.57 m	
8.0 Living Area				20.11						m²				
9.0 External Walls														
Description	Туре	C	Construction		U-Value				Shelter Res	Shelf	ter	Opening		Calculation
External Wall	Timber Fram	<u> Б</u>	Timber framed wall (c	one layer of plasterboard)	(vv/m-k) 0.21	9.00	69.52	(m²)	0.00	Non	۵	9.03		Type Gross Area
9.1 Party Walls	Timber Frame	-	iniber named wan (e	one layer or plasterboard)	0.21	3.00	05.52	00.40	0.00	14011		3.00	Litter	01033 AICA
Description	Туре		Construc	tion				U-Value	Карр	a Area	a Sh	elter	She	elter
Party Wall	Filled Edge			asterboard on both si ut sheathing board	des, twin	timber	f rame	(W/m²K 0.00	(kJ/m² 20.00			es	No	one
9.2 Internal Walls														
Description			Constructi	on									opa <i>A</i> n²K)	Area (m²)
Ground Floor First Floor				rd on timber frame rd on timber frame									00 00	31.27 49.60
10.0 External Roofs	T		Onn-1 !!			\/_!··	V	0	NI - 44	Oh - !!	Ob - ''	O-'	.l=4!)
Description	Туре		Construction					Gross Area(m²)		Shelter Code			ılation(/pe	Opening
Insulated Plane	External Roof	Plane	Plasterboard, i	nsulated at ceiling le	vel (0.09	9.00	25.14	(m²) 0.00	None	0.00		Gross rea	0.00
10.2 Internal Ceilings														
Description Ground Floor			Storey _owest occupied	Construction Plasterboard ceiling	ng, carpet	ed chip	oboard f	loor					Area 25	
11.0 Heat Loss Floors														
Description	Туре		Storey Index	Construction				U-Value W/m²K)	She	Iter Code		Shelter Factor	Kappa (kJ/m²k	Area (m²
Ground Floor	Ground Flo	or - Soli	d Lowest occupied	Suspended concrete flo	or, carpeted	l	'	0.12		None		0.00	75.00	25.14



Description		Storey	Construction								Area (m²
First Floor		Index	Plasterboard cei	ling, carpeted	chipboard fl	oor				(kJ/m²K) 9.00	25.14
12.0 Opening Types											
Description	Data Source	Туре	Glazi	ng		Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Solid Doors Windows	Manufacturer BFRC, BSI or CERTASS data			le Low-E Soft (0.05			0.46			1.10 1.30
Patio Doors	BFRC, BSI or CERTASS data	Window	Doub	e Low-E Soft (0.05			0.46			1.30
Name Front Door Front Windows RH Windows Rear Windows Rear Patio Doors	Opening Ty Solid Doors Windows Windows Windows Patio Doors	oe	Location External Wa External Wa External Wa External Wa External Wa	all all all		Orient Ea: Ea: Nor We We	st st th st	Area (2.1 1.9 0.4 1.3 3.0	3 7 8 6	Pit	tch
14.0 Conservatory			None					7			
15.0 Draught Proofing			100					- %			
16.0 Draught Lobby			No								
17.0 Thermal Bridging 17.1 List of Bridges			Calculate B	ridges							
Bridge Type E2 Other lintels (including E3 Sill E4 Jamb E5 Ground floor (normal) E6 Intermediate floor with E10 Eaves (insulation at E12 Gable (insulation at E16 Corner (normal) E18 Party wall between c P1 Party wall - Ground floor P2 Party wall - Intermedian P4 Party wall - Roof (insulation)) hin a dwelling ceiling level) ceiling level) dwellings oor ate floor within a	dwelling	Source Type Independently a Table K1 - Defau	ssessed ssessed ssessed ssessed ssessed ssessed ssessed ssessed ssessed	Length 5.73 3.31 19.80 14.20 14.20 7.45 6.75 9.79 9.79 6.75 6.75 6.75	Psi 0.08 0.03 0.02 0.09 0.03 0.04 0.04 0.05 -0.00 0.03 0.00	Adjusted 0.08 0.03 0.02 0.09 0.03 0.04 0.04 0.05 -0.00 0.03 0.00 0.02	Reference	:		Imported No No No No No No No No No No No
Y-value			0.03					W/m²K			
18.0 Pressure Testing			Yes								
Designed AP ₅₀			4.50					m³/(h.m	n²) @ 50 Pa	а	
Test Method			Dlawar Daa					7			
			Blower Doo	<u>r</u>							
19.0 Mechanical Ventilation	1		Blower Doo	r							
19.0 Mechanical Ventilation Mechanical Ventilation	1		Blower Doo	<u>r</u>							
		ent	Yes	r							
Mechanical Ventilation	tion System Pres	ent		r							
Mechanical Ventilation Mechanical Ventilat	tion System Pres	ent	Yes	r							
Mechanical Ventilation Mechanical Ventilat Approved Installation	tion System Pres	ent	Yes No Database	extract ventila	tion - decen	tralised					
Mechanical Ventilation Mechanical Ventilat Approved Installatio Mechanical Ventilat	tion System Pres on tion data Type	ent	Yes No Database		tion - decen	tralised					
Mechanical Ventilation Mechanical Ventilat Approved Installation Mechanical Ventilation Type	tion System Pres on tion data Type	ent	Yes No Database Mechanical		tion - decen	tralised					
Mechanical Ventilation Mechanical Ventilat Approved Installatio Mechanical Ventilat Type MV Reference Num	tion System Pres on tion data Type	ent	Yes No Database Mechanical 500787		tion - decen	tralised					
Mechanical Ventilation Mechanical Ventilat Approved Installatio Mechanical Ventilat Type MV Reference Num Duct Type	tion System Pres on tion data Type nber		Yes No Database Mechanical 500787 Flexible		tion - decen	tralised					
Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation Mechanical Interpretable Mechanical Ventilation Mechanical Ventilation Type MV Reference Num Duct Type Wet Rooms 19.1 Mechanical extract veices SFP Fan/ 0.13 In Reference Kitch 0.11 In Reference 0.00 In Deference Wet 0.00 In Deference Wet	ntilation - Decer remains a property of the company of the compan	ntralised Count	Yes No Database Mechanical 500787 Flexible		tion - decen	tralised					



21.0 Fixed Cooling System	No				
22.0 Lighting					
No Fixed Lighting	No				•
	Name Downlights Spotlights	Efficacy 80.00 90.00	Power 28 9	Capacity 2240 810	Count 5 5
24.0 Main Heating 1	Database				
Percentage of Heat	100.00			%	
Database Ref. No.	104568				
Fuel Type	Electricity				
In Winter	0.00				
In Summer	0.00				
Model Name	Ecodan 5.0 kW				
Manufacturer	Mitsubishi Electr	ic Europe B.V.			
System Type	Heat Pump				
Controls SAP Code	2207			_	
PCDF Controls	0			Ī	
Is MHS Pumped	Pump in heated	space		Ī	
Heating Pump Age	2013 or later	•		Ħ	
Heat Emitter	Radiators			Ħ	
Flow Temperature	Enter value			Ħ	
Flow Temperature Value	55.00			Ħ	
				<u> </u>	
26.0 Heat Networks Heat Source Fuel Type Heating U	None None See Efficiency	Percentage Of H	eat Heat E Power Ratio	lectrical Fuel Factor	or Efficiency typ
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4	None		Power	lectrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	None		Power	lectrical Fuel Facto	or Efficiency typ
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	None		Power	lectrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating	None Se Efficiency		Power	lectrical Fuel Facto	or Efficiency ty
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code	None Se Efficiency Main Heating 1		Power	lectrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System	None Se Efficiency Main Heating 1		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1	None Se Efficiency Main Heating 1 901 No		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2	None Se Efficiency Main Heating 1 901 No No No		Power	lectrical Fuel Factor	or Efficiency ty
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1	Main Heating 1 901 No No No		Power	lectrical Fuel Factor	or Efficiency ty
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel	None Se Efficiency Main Heating 1 901 No No No		Power	lectrical Fuel Factor	or Efficiency ty
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System	Main Heating 1 901 No No No No No No Yes		Power	lectrical Fuel Factor	or Efficiency typ
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source	Main Heating 1 901 No No No No No		Power	lectrical Fuel Factor	or Efficiency ty
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count	Main Heating 1 901 No No No No No Yes From mains 1		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	Main Heating 1 901 No No No No No No Yes		Power	lectrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	None Main Heating 1 901 No No No No No From mains 1 Yes	Heat	Power Ratio	Dectrical Fuel Factor	
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	None Main Heating 1 901 No No No No No From mains 1 Yes	Heaf	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type	None Main Heating 1 901 No No No No No From mains 1 Yes	Flow F	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type 28.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No No Yes From mains 1 Yes	Flow F	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type 28.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No No Yes From mains 1 Yes Hot Water Cyline	Flow F	Power Ratio		



III Alling Cupboard		
In Airing Cupboard No		
Pipes insulation Fully ins	sulated primary pipework	
Loss 1.23		kWh/day
Cylinder Volume 150.00		L
Insulation Type Measure	red Loss	

Recommendations

Lower cost measures

None Further measures to achieve even higher standards

Typical Coot	Typical cavings non year	Ratings at	ter improvement
Typical Cost	Typical savings per year	SAP rating	Environmental Impact
£4,000 - £6,000	£62	B 81	A 96
£3,500 - £5,500	£137	B 89	A 98
		0	0



												′	
Property Reference	00851	7 - HT - Ashdown -	Semi					İssı	ued on Da	te	16/03/20	23	
Assessment Reference	e As De	signed - As			Prop	Туре	Ref	HT - A	Ashdown -	Semi			
Property	Plot , I	_and Nr Rectory Fa	ırm										
SAP Rating			79 C	DER		4.71			TER		10.79		
Environmental			96 A	% DER	< TFR	4.71			, EK		56.35		
CO ₂ Emissions (t/year	·)		0.45	DFEE	· IIII	33.2	n		TFEE		34.27		
Compliance Check	,		See BREL		E < TFEE		.0				3.12		
% DPER < TPER			12.33	DPER		49.5	3		TPER		56.49		
70 21 211 211 211			12.00			40.0					00.40		
Assessor Details	Mr. Benjam	nin Wood							Assess	or ID	P717	-0001	
Client	Persimmor	n Homes Severn Va	alley , null										
SUMMARY FOR INF	PUT DATA FO	R: New Build (As Designed)										
Orientation			East										
Property Tenture			ND										
Transaction Type			6										
Terrain Type			Suburban										
1.0 Property Type			House, Semi-Detach	ed									
2.0 Number of Storeys			3										
3.0 Date Built			2023										
4.0 Sheltered Sides			2										
5.0 Sunlight/Shade			Average or unknown										
6.0 Thermal Mass Parar	neter		Precise calculation										
			0										
7.0 Electricity Tariff	6 11 1		Standard										
Smart electricity mete			No										
Smart gas meter fitted	<u> </u>		No										
7.0 Measurements			Ground floor 1st Storey 2nd Storey	r: /:	Loss Per 16.33 m 16.33 m 16.33 m		r Int	33.3 33.3	Floor Area 32 m² 32 m² 32 m²	ı Av	2.5	orey 2 m 5 m 5 m	Heigh
8.0 Living Area			13.89						m²				
9.0 External Walls													
Description	Туре	Construction		U-Value	Kappa ((kJ/m²K) Aı	Gross	Nett Area	Shelter Res	Shelte	r C	penings A		
External Wall	Timber Frame	Timber framed wall (o	ne layer of plasterboard)	0.21		121.13	(m²) 104.00	0.00	None		17.13 E		rpe ross Are
9.1 Party Walls		`	, ,										
Description	Туре	Construct	tion				U-Value					Shel	ter
Party Wall	Filled Cav Edge Sea	,	asterboard on both sic ut sheathing board	des, twin t	imber f ra		(W/m²K) 0.00	20.00		Re	es	Non	ie
9.2 Internal Walls							_						
Description		Construction	on								Kappa (kJ/m²K		ea (m
GF FF			d on timber frame d on timber frame								9.00		71.06 64.72
SF			d on timber frame								9.00		77.16
10.0 External Roofs													
Description	Туре	Construction			/alue Ka _l m²K)(kJ/ı			Nett Area	Shelter S Code I		Calculat Type	onO	penin
Insulated Plane	External Plar Roof	ne Plasterboard, i	nsulated at ceiling lev	•		.00	33.32	(m²) 0.00	None			oss	0.00
10.2 Internal Ceilings													
Description GF FF		Storey Lowest occupied +1	Construction Plasterboard ceilin Plasterboard ceilin								A	rea (1 33.3 33.3	2

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11.0 Heat Loss Floors



								,		101	$\supset J$	
Description	Туре	Storey Inde		Construction		U-Valı (W/m²	K)	Shelter Code		Shelter Factor	(kJ/m²	
Ground Floor	Ground Floor - Solid	Lowest occu	pied	Suspended concrete floor, carpeted		0.12	!	None		0.00	75.00	33.32
11.2 Internal Floors		Ctaman	٥									A /
Description		Storey Index	COI	nstruction							appa J/m²K)	Area (m²
SF FF				sterboard ceiling, carpeted chipboard sterboard ceiling, carpeted chipboard							9.00 9.00	33.32 33.32
12.0 Opening Types			- 1	storboard coming, carpoted emploare	4 11001	'						00.02
Description	Data Source	Туре		Glazing	G	lazing	Filling	G-value	Frame	e Fi	rame	U Value
Windows				Double Low-E Soft 0.05		Gap	Туре	0.46	Type	Fa	actor	(W/m²K
	BFRC, BSI or CERTASS data	a		Double Low-E Soil 0.05				0.46				1.30
Solid Door Patio Door	Manufacturer BFRC, BSI or		or	Double Low-E Soft 0.05				0.46				1.10 1.30
1 4110 2001	CERTASS data			Bouble Low E Colt 0.00				0.40				1.00
13.0 Openings												
Name Front Door	Opening Tyl Solid Door	pe		Location External Wall		Orienta		Area (1.9			Pit	ch
Front Windows	Windows			External Wall		Eas Eas		4.30				
LH Windows	Windows			External Wall		Sout		0.60				
Rear Windows Front Patio Doors	Windows Patio Door			External Wall External Wall		Wes Eas		4.53 2.53				
Rear Patio Door	Patio Door			External Wall		Wes		3.1				
14.0 Conservatory				None								
15.0 Draught Proofing				100				<u> </u>				
16.0 Draught Lobby				No				╡ ~				
				110								
17.0 Thermal Bridging				Calculate Bridges								
17.1 List of Bridges			٥	Time		Da:	A ali	d Defenses				
Bridge Type E1 Steel lintel with pe	erforated steel base i	olate		urce Type Lengtlependently assessed 11.52		Psi 0.08	0.08	d Reference	:			Importe No
E3 Sill	·	ı	Inde	ependently assessed 7.88		0.03	0.03					No
E4 Jamb E5 Ground floor (nor	mal)			ependently assessed 36.60 ependently assessed 16.33		0.02	0.02 0.09					No No
E6 Intermediate floor	within a dwelling		Inde	ependently assessed 32.66	3	0.03	0.03					No
E10 Eaves (insulation E12 Gable (insulation				ependently assessed 8.00 ependently assessed 8.33		0.04	0.04 0.04					No No
E12 Gable (Insulation	rat ceiling lever)			ependently assessed 0.33		0.04	0.04					No
E18 Party wall betwe	en dwellings			ependently assessed 14.83		-0.00	-0.00					No
P1 Party wall - Grour P2 Party wall - Interm		dwelling		ependently assessed 8.33 ependently assessed 8.33		0.03	0.03					No No
P4 Party wall - Roof (ependently assessed 8.33		0.02	0.02					No
Y-value				0.03				W/m²K				
40.00				· ·								
18.0 Pressure Testing				Yes						_		
Designed AP ₅₀				4.50				m³/(h.m	²) @ 50) Pa		
Test Method				Blower Door								
19.0 Mechanical Ventila	ition											
Mechanical Ventilat								_				
	ntilation System Pres	sent		Yes				_				
Approved Insta	llation			No				_				
Mechanical Ver	ntilation data Type			Database								
Туре				Mechanical extract ventilation - dec	central	lised						
MV Reference	Number			500787								
Duct Type				Flexible								
Wet Rooms				4								
19.1 Mechanical extract	t ventilation - Decer	ntralised										
		Count										
	n Room Fan (Kitchen	0										
0.11 I	n Room Fan Other 2	2										
0.00 I	Wet Room n Duct Fan Kitchen (
	n Duct Fan Other(Wet Room)										
0.10	Through Wall Fan 1	1										
	Kitchen Γhrough Wall Fan _ 1	1										
	-											

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Other Wet Room 20.0 Fans, Open Fireplaces, Flues No 21.0 Fixed Cooling System 22.0 Lighting No Fixed Lighting Capacity Count Downlights Spotlights 80.00 28 2240 11 8 80.00 9 720 24.0 Main Heating 1 Database Percentage of Heat 100.00 % Database Ref. No. 104568 Electricity Fuel Type In Winter 0.00 In Summer 0.00 Ecodan 5.0 kW Model Name Manufacturer Mitsubishi Electric Europe B.V. System Type Heat Pump Controls SAP Code 2207 **PCDF Controls** 0 Is MHS Pumped Pump in heated space Heating Pump Age 2013 or later Heat Emitter Radiators Flow Temperature Enter value 55.00 Flow Temperature Value 25.0 Main Heating 2 None 26.0 Heat Networks None **Fuel Type Heating Use** Efficiency Percentage Of **Fuel Factor** Efficiency type Power Ratio Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating Main Heating 1 SAP Code 901 Flue Gas Heat Recovery System No Waste Water Heat Recovery Instantaneous System 1 No Waste Water Heat Recovery Instantaneous System 2 No Waste Water Heat Recovery Storage System No Solar Panel No Water use <= 125 litres/person/day Yes **Cold Water Source** From mains **Bath Count** 1 Yes Immersion Only Heating Hot Water 28.1 Showers Description **Shower Type** Flow Rate Rated Power Connected Connected To [l/min] 28.3 Waste Water Heat Recovery System Hot Water Cylinder 29.0 Hot Water Cylinder Cylinder Stat Yes



31.0 Thermal Store	None	
In Airing Cupboard	No	
Loss	1.23	kWh/day
Cylinder Volume	150.00	L
Insulation Type	Measured Loss	
Independent Time Control	Yes	
Cylinder In Heated Space	Yes	

Recommendations

Lower cost measures None

Further measures to achieve even higher standards

 Typical Cost
 Typical savings per year
 Ratings after improvement

 £4,000 - £6,000
 £68
 B 81
 A 96

 £3,500 - £5,500
 £166
 B 87
 A 97

 0
 0
 0



Property Reference	008517	7 - HT - Burnham -	- Det					Issu	ed on Da	ite	16/03	/2023	
Assessment Reference	As Des	signed - As			Prop	Туре	Ref	HT - B	urnham -	Det			
Property	Plot , L	and Nr Rectory Fa	arm										
SAP Rating			77 C	DER		5.15	5		TER		11.	71	
Environmental			95 A	% DER	< TER	0.10	,					.02	
CO ₂ Emissions (t/year)			0.5	DFEE		39.7	72		TFEE		41		
Compliance Check			See BREL	% DFE	E < TFEI		_				5.4		
% DPER < TPER			11.77	DPER		54.0)8		TPER		61		
								=					
Assessor Details	Mr. Benjami								Assess	or ID	P7	17-000	1
Client		Homes Severn Va	•										
SUMMARY FOR INPL	II DAIA FOI	R: New Build (As Designed)										
Orientation			East										
Property Tenture			ND										
Transaction Type			6										
Terrain Type			Suburban										
1.0 Property Type			House, Detached										
2.0 Number of Storeys			2										
3.0 Date Built			2022										
4.0 Sheltered Sides			2										
5.0 Sunlight/Shade			Average or unknown	l									
6.0 Thermal Mass Parame	ter		Precise calculation										
7.0 Electricity Tariff			Standard										
Smart electricity meter t	itted		No										
Smart gas meter fitted			No										
7.0 Measurements			Ground floo 1st Store	r:	Loss Pe 31.87 r 31.77 r	n	er Int	ernal F 43.2 58.6		а А		Storey 2.57 m 2.30 m	' Heigh
8.0 Living Area			15.53						m²				
9.0 External Walls Description	Туре	Construction		U-Value (W/m²K)		Gross Area(m²)		Shelter Res	Shelte	er (Openings		alculatioi ype
	Timber Frame Timber Frame		one layer of plasterboard) wo layers of plasterboard)	0.21 0.21	9.00 18.00	130.81 21.07	113.66 21.07	0.00 0.35	None Garage Si	ngle 1	17.15 0.00		Bross Are Bross Are
Wall to Garage (Brick)	Timber Frame	Timber framed wall (t	wo layers of plasterboard)	0.26	18.00	3.08	3.08	0.33	Outsid Garage Sin	ngle 1	0.00	Enter G	Gross Are
9.1 Party Walls									Outsid				
Description	Туре	Construc	tion				U-Value			She	elter	She	Iter
Party Wall	Filled Cavit Edge Seali		sterboard on dabs bo blocks, cavity or cavi		ightweig	ht	(W/m²K) 0.00	(kJ/m²l 110.00			es	No	ne
9.2 Internal Walls Description		Constructi	on								Kap (kJ/m		rea (m²
Ground Floor First Floor			rd on timber frame rd on timber frame								9.0	0 '	66.87 142.51
10.0 External Roofs Description	Туре	Construction			/alue Ka m²K)(kJ		Gross Area(m²)	Area	Shelter :)pening
Insulated Plane	External Pland Roof	e Plasterboard, i	nsulated at ceiling lev	el 0.	.09 9	9.00	58.67	(m²) 0.00	None	0.00	Enter Are		0.00
10.2 Internal Ceilings Description Ground Floor		Storey Lowest occupied	Construction Plasterboard ceilin	g, carpete	ed chipb	oard flo	oor					Area 43.2	



11.0 Heat Loss Floors Description	Type Storey	Index	Construction		U-Val	IO.	Shelter Code	She	elter Kapı	pa Area (m²
Ground Floor	Ground Floor - Solid Lowes		Suspended concrete floor,	carpeted	(W/m² 0.12	K)	None	Fac	tor (kJ/m	²K)
Floor above Garage	Exposed Floor - +1 Timber	Coodpica	Timber exposed floor, insul				ge Single 1 Ou		00 20.0	
11.2 Internal Floors										
Description	Stor Inde		nstruction						Kappa (kJ/m ² K)	Area (m²)
First Floor	mac		sterboard ceiling, carpe	ted chipboard flo	oor				9.00	43.27
12.0 Opening Types										
Description	Data Source Type		Glazing		Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m ² K)
Solid Door		Door	5 50	"	Cap	туре	0.40	турс	i actor	` 1.10 <i>´</i>
Windows	BFRC, BSI or Wind CERTASS data	low	Double Low-E S	οπ 0.05			0.46			1.30
French Door	BFRC, BSI or Wind CERTASS data	low	Double Low-E S	oft 0.05			0.46			1.30
13.0 Openings										
Name	Opening Type		Location		Orienta		Area		Pi	tch
Front Door Front Windows	Solid Door Windows		External Wall External Wall		Eas Eas		2.1 5.3			
RH Window	Windows		External Wall		Nort	h	0.4	3		
Rear Windows Rear Patio Door	Windows French Door		External Wall External Wall		Wes		5.3 3.8			
14.0 Conservatory			None				_			
15.0 Draught Proofing			100				%			
16.0 Draught Lobby			No							
17.0 Thermal Bridging			Calculate Bridges							
17.1 List of Bridges										
Bridge Type			urce Type	Length			d Reference			Imported
E1 Steel lintel with performance E3 Sill	orated steel base plate		ependently assessed ependently assessed	12.15 9.31	0.08 0.03	0.08 0.03	Persimmor Persimmor			No No
E4 Jamb			ependently assessed	29.40	0.02	0.02	Persimmor			No
E5 Ground floor (norma E5 Ground floor (norma			ependently assessed ependently assessed	23.66 8.21	0.09 0.09	0.09 0.09	Persimmor Wall to Gar			No No
E20 Exposed floor (norr			ependently assessed	7.96	0.09	0.09	Persimmor			No
E21 Exposed floor (inve	rted)	Ind	ependently assessed	7.96	-0.01	-0.01	Persimmor	Bespoke		No
E6 Intermediate floor wi E10 Eaves (insulation a			ependently assessed ependently assessed	22.46 13.40	0.03 0.04	0.03 0.04	Persimmor	Веѕроке		No No
E12 Gable (insulation at			ependently assessed	18.37	0.04	0.04	Persimmor	Bespoke		No
E16 Corner (normal)			ependently assessed	19.22	0.05	0.05	Persimmor		`	No
E16 Corner (normal) E17 Corner (inverted – i	nternal area greater tha		ole K1 - Default ependently assessed	2.57 2.30	0.18 -0.04	0.18 -0.04	Wall to Gar Persimmor)	No No
external area) E17 Corner (inverted – i	· ·		ole K1 - Default	2.57	0.00	0.00	Wall to Gar	•)	No
external area)										
Y-value			0.03				W/m²K			
18.0 Pressure Testing			Yes							
Designed AP ₅₀			4.50				m³/(h.m	²) @ 50 Pa	а	
Test Method			Blower Door							
19.0 Mechanical Ventilatio										
Mechanical Ventilation	ı ation System Present		Yes							
	•		No				\dashv			
Approved Installat Mechanical Ventila			Database				\dashv			
	anon data Type		Mechanical extract ver	ntilation document	ralicad		\dashv			
Type MV Reference Nu	mher		500787	ilialion - decent	ialiseu		\dashv			
Duct Type	mpei		Flexible				_			
•			4				\dashv			
Wet Rooms			17							
19.1 Mechanical extract ve SFP Far	entilation - Decentralis n/Room Type Count									
0.13 In F	Room Fan 0									
	chen Room Fan Other 2									
We	t Room									
0.00 In E	Ouct Fan Kitchen 0									

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In Duct Fan Other 0 0.00 Wet Room 0.10 Through Wall Fan Kitchen 0.10 Through Wall Fan Other Wet Room 20.0 Fans, Open Fireplaces, Flues No 21.0 Fixed Cooling System 22.0 Lighting No Fixed Lighting No Power Name **Efficacy** Capacity Count Downlights Spotlights 80.00 90.00 2240 810 9 8 24.0 Main Heating 1 Database Percentage of Heat 100.00 % 104568 Database Ref. No. Fuel Type Electricity In Winter 0.00 In Summer 0.00 Model Name Ecodan 5.0 kW Mitsubishi Electric Europe B.V. Manufacturer Heat Pump System Type Controls SAP Code 2207 **PCDF Controls** Is MHS Pumped Pump in heated space Heating Pump Age 2013 or later Heat Emitter Radiators Enter value Flow Temperature 55.00 Flow Temperature Value 25.0 Main Heating 2 None 26.0 Heat Networks None **Heat Source Fuel Type Heating Use Efficiency Percentage Of** Heat Heat **Fuel Factor** Efficiency type Heat Power Ratio Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating Main Heating 1 SAP Code 901 No Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 No Waste Water Heat Recovery Storage System No Solar Panel No Water use <= 125 litres/person/day Yes Cold Water Source From mains **Bath Count** 1 Yes Immersion Only Heating Hot Water 28.1 Showers Description **Shower Type** Flow Rate Rated Power Connected Connected To [l/min] [kW]



28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	150.00	L
Loss	1.23	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations

Lower cost measures

None Further measures to achieve even higher standards

 Typical Cost
 Typical savings per year
 Ratings after improvement SAP rating Environmental Impact Environmental Impact Environmental Environmental Environmental Environmental Environmental Environmental Environmental Environment SAP rating Environment SAP rating Environment SAP rating Environment SAP rating Environment SAP rating Environment SAP rating Environment SAP rating Environment SAP rating Environmental Environment SAP rating Environmental



Property Reference	0088	517 - HT - Charnwoo	od - DET					Issu	ed on D	ate	16/03	3/2023	
Assessment Reference	As E	Designed			Pro	р Туре	Ref	HT - (Charnwoo	od - DE	Т		
Property	Plot	, Land Nr Rectory F	arm										
SAP Rating			77 C	DER		5.2	R		TER		11	.07	
Environmental			95 A	% DER	< TFR		5		1210			2.30	
CO ₂ Emissions (t/year)			0.47	DFEE	11210	39.	1.4		TFEE			9.33	
Compliance Check			See BREL	% DFE	E / TEE		14					49	
% DPER < TPER			3.86	DPER	- \ 111	55.	50		TPER			7.73	
// DFER \ IFER			3.00	DFLK		55.	50		IFLK		51	7.73	
Assessor Details	Mr. Benja	amin Wood							Asses	sor ID	P	717-00	01
Client	Persimm	on Homes Severn V	′alley , null										
SUMMARY FOR INP	JT DATA F	OR: New Build ((As Designed)										
Orientation			East										
Property Tenture			ND										
Transaction Type			6										
Terrain Type			Suburban					=					
1.0 Property Type			House, Detached					=					
2.0 Number of Storeys			2					=					
3.0 Date Built			2022										
4.0 Sheltered Sides			3										
								=					
5.0 Sunlight/Shade	-to-		Average or unknown	I				_					
6.0 Thermal Mass Parame	eter		Precise calculation										
7.0 Electricity Tariff			Standard										
Smart electricity meter	fitted		No										
Smart gas meter fitted			No										
7.0 Measurements													
			Ground floo 1st Store	r:	27.68 27.68		er In	46.2	loor Are 3 m² 3 m²	a A	verage	2.33 n 2.57 n	
8.0 Living Area			17.55						m²				
9.0 External Walls													
Description	Туре	Construction		U-Value (W/m²K)		Gross	Nett) Area	Shelter Res	Shelf	ter (Opening	s Area	Calculation Type
External Wall	Timber Frame	Timber framed wall (one layer of plasterboard)	0.21	9.00	135.54	(m²) 115.53	0.00	Non	e	20.01	Enter	Gross Area
9.1 Party Walls		Timber Hames Ham (one layer or plactorized ay	0.2.									0.0007400
Description	Туре	Construc	tion				U-Value	Карр	a Area	a She	elter	Sh	elter
Party Wall	Filled Ca Edge Se		asterboard on both si out sheathing board	des, twin t	timber f	rame	(W/m²K) 0.00	20.00 (kJ/m²			es	N	one
9.2 Internal Walls													
Description		Construct	ion									opa n²K)	Area (m²
Ground Floor First Floor			rd on timber frame rd on timber frame								•	00 ′	98.75 142.12
10.0 External Roofs		_					_						_
Description	Туре	Construction					Gross Area(m²)	Nett Area	Shelter Code			ılation /pe	Opening
Insulated Plane	External Pl Roof	ane Plasterboard,	insulated at ceiling le	-	.09	9.00	46.23	(m²) 0.00	None	0.00		Gross rea	0.00
10.2 Internal Ceilings													
Description Ground Floor		Storey Lowest occupied	Construction I Plasterboard ceiling	ng, carpete	ed chip	board fl	oor						.23
11.0 Heat Loss Floors	_												
Description	Туре	Storey Index	Construction				l-Value N/m²K)		Iter Code		Shelter Factor	(kJ/m²l	
Ground Floor	Ground Floor	- Solid Lowest occupied	Suspended concrete flo	or, carpeted			0.12		None		0.00	75.00	46.23



11.2 Internal Floors											
Description		Storey	Constru	ıction							Area (m²)
First Floor		Index	Plasterb	oard ceiling, carp	eted chipboard fl	oor				(kJ/m²K) 9.00	46.23
12.0 Opening Types Description	Data Source	Туре		Glazing		Glazing		G-value	Frame	Frame	U Value
Solid Doors Windows	Manufacturer BFRC, BSI or		r	Double Low-E	Soft 0 05	Gap	Туре	0.46	Type	Factor	(W/m²K) 1.10 1.30
Patio Doors	CERTASS data BFRC, BSI or	а		Double Low-E				0.46			1.30
Half-Glazed Doors	CERTASS data Manufacturer	а		Double Low-E				0.40		0.70	1.60
13.0 Openings	Mandacturer	VVIIIGOW		Double Low-L	0011 0.00			0.03		0.70	1.00
Name Front Door Front Windows Rear Windows Rear Patio Doors Rear Door	Opening Ty Solid Doors Windows Windows Patio Doors Half-Glazed	-	Ext Ext Ext Ext	cation ernal Wall ernal Wall ernal Wall ernal Wall ernal Wall		Orien Ea Ea We We	ast ast est est	Area 2.1 7.9 3.9 3.7 2.1	5 4 9 8	Pi	tch
14.0 Conservatory			Nor	ne							
15.0 Draught Proofing			100)				%			
16.0 Draught Lobby			No								
17.0 Thermal Bridging 17.1 List of Bridges			Cal	culate Bridges							
Bridge Type E2 Other lintels (includi E3 Sill E4 Jamb E5 Ground floor (norma E6 Intermediate floor w E10 Eaves (insulation a E12 Gable (insulation a E16 Corner (normal)	al) rithin a dwelling at ceiling level)	els)	Indepen Indepen Indepen Indepen Indepen Indepen	Type dently assessed dently assessed dently assessed dently assessed dently assessed dently assessed dently assessed dently assessed dently assessed	Length 13.95 10.10 33.30 27.68 27.68 16.43 11.26 19.58	Psi 0.08 0.03 0.02 0.09 0.03 0.04 0.04 0.05	0.08 0.03 0.02 0.09 0.03 0.04 0.04	d Reference	: 		Imported No No No No No No No
Y-value			0.0	3				W/m²K			
18.0 Pressure Testing			Yes	3							
Designed AP ₅₀			4.50	0				m³/(h.n	n²) @ 50 Pa	а	
Test Method			Blo	wer Door							
19.0 Mechanical Ventilation											
Mechanical Ventilation Mechanical Ventil		cent	Yes	,				\neg			
Approved Installa	•	SCIIL	No	•				\dashv			
Mechanical Ventil				abase				╡			
Type	anon adia 1, po			chanical extract ve	entilation - decen	tralised		\dashv			
MV Reference Nu	ımber			787				Ħ			
Duct Type				xible				=			
Wet Rooms			4								
19.1 Mechanical extract v	rentilation - Dece	ntralised									
		Count 0									
Kit	chen Room Fan Other										
0.00 We	et Room Duct Fan Kitchen Duct Fan Other	0									
0.10 Th	et Room rough Wall Fan chen										
0.10 Th	rough Wall Fan her Wet Room	1									
20.0 Fans, Open Fireplace	es, Flues										
21.0 Fixed Cooling System	m		No								

SAP 10 Online 2.4.5 Page 2 of 4

22.0 Lighting



Database 00.00 04568 Electricity 0.00 0.00 Ecodan 5.0 kW Mitsubishi Electric Europe B.V.	%		
04568 Electricity 0.00 0.00 Ecodan 5.0 kW Mitsubishi Electric Europe B.V.	%		
D.00 D.00 Ecodan 5.0 kW Mitsubishi Electric Europe B.V.			
0.00 0.00 Ecodan 5.0 kW Mitsubishi Electric Europe B.V.			
0.00 Ecodan 5.0 kW Mitsubishi Electric Europe B.V.			
Ecodan 5.0 kW Mitsubishi Electric Europe B.V.			
Mitsubishi Electric Europe B.V.			
loot Dumn			
leat Pump			
2207			
Pump in heated space			
2013 or later			
Radiators			
Enter value			
55.00			
lone			
Main Heating 1			
001			
No			
'es			
		ected Connected To	· · · · · · · · · · · · · · · · · · ·
Flow Rate Rated	d Power Conne	ected Connected To)
Flow Rate Rated [l/min] [l		ected Connected To)
Flow Rate Rated [I/min] [I		ected Connected To)
Flow Rate Rated [I/min] [I		ected Connected To)
Flow Rate Rated [I/min] [I		ected Connected To)
Flow Rate Rated [I/min] [I		ected Connected To)
	Pump in heated space 2013 or later Radiators Enter value 35.00 Jone Efficiency Percentage Of Heat Heat Percentage New York Research Heat Percentage New York Research Heat New York Research Heat New York Research Heat New York Research Heat New York Research Heat New York	Pump in heated space 2013 or later Radiators Enter value 15.00 Rone Efficiency Percentage Of Heat Heat Power Ratio Main Heating 1 1001 Rolo Rolo Rolo Rolo Rolo Rolo Rolo Rol	Pump in heated space 2013 or later Radiators Enter value 25.00 Rone Efficiency Percentage Of Heat Heat Power Ratio Main Heating 1 201 200 200 200 200 200 200 2



Loss	1.23	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations
Lower cost measures

Further measures to achieve even higher standards

Typical Cost	Typical cavings par year	Ratings after improvement						
Typical Cost	Typical savings per year	SAP rating	Environmental Impact					
£4,000 - £6,000	£68	C 79	A 96					
£3,500 - £5,500	£164	B 86	A 97					
		0	0					



Property Reference	000	3517 - HT - [Danbury -	SEMI					Issu	ed on D	ate	16/03	3/2023	
Assessment Reference	As	Designed - /	As			Pro	ор Туре	Ref	HT - [Danbury -	SEMI			
Property	Plo	t , Land Nr F	Rectory Fa	ırm										
SAP Rating				79 C	DER		5.3	2		TER		11	.70	
Environmental				96 A	% DER	< TFR		2		1210			1.53	
CO ₂ Emissions (t/year)				0.38	DFEE		34.	5.4		TFEE			5.39	
Compliance Check				See BREL	% DFE	E / TEI		J 4					06	
% DPER < TPER				8.26	DPER	_ \	56.	10		TPER			1.17	
// DFER > IFER				0.20	DFLK		36.	12		IFLK		0	1.17	
Assessor Details	Mr. Ben	jamin Wood								Asses	sor ID	P	717-00	01
Client	Persimn	non Homes	Severn Va	alley , null										
SUMMARY FOR INPU	JT DATA I	FOR: New	Build (As Designed)										
Orientation				East										
Property Tenture				ND										
Transaction Type				6					\equiv					
Terrain Type				Suburban					=					
1.0 Property Type				House. Semi-Detacl	ned				=					
2.0 Number of Storeys				2	104				=					
3.0 Date Built				2023					=					
4.0 Sheltered Sides				2										
5.0 Sunlight/Shade				Average or unknowr	`				=					
6.0 Thermal Mass Parame	otor			Precise calculation	ı									
	etei .			Frecise calculation										
7.0 Electricity Tariff				Standard										
Smart electricity meter	fitted			No										
Smart gas meter fitted				No										
7.0 Measurements														
				Ground floo 1st Store	r:	17.37 17.37		er In	37.0	loor Are 3 m² 3 m²	a A	verage	2.33 m 2.57 m	
8.0 Living Area				17.72						m²				
9.0 External Walls														
Description	Туре	Construc	ction		U-Value		Gross) Area(m	Nett) Area	Shelter Res	Shelf	ter (Opening	s Area	Calculation Type
External Wall	Timber Frame	Timber fra	amed wall (o	ne layer of plasterboard)	0.21	9.00	85.11	(m²) 71.83	0.00	Non	e	13.28	Enter	Gross Area
9.1 Party Walls				no layer er placterizeara)	0.2.							.0.20		0.000700
Description	Туре	(Construc	tion				U-Value	Карр	a Area	a She	elter	Sh	elter
Party Wall	Filled C Edge S			asterboard on both si ut sheathing board	des, twin	timber	f rame	(W/m²K) 0.00	(kJ/m² 20.00			es	N	one
9.2 Internal Walls														
Description		С	onstructi	on									opa n²K)	Area (m²)
Ground Floor First Floor				d on timber frame d on timber frame								` 9.	00 00	54.94 111.13
10.0 External Roofs														
Description	Туре	Cons	struction					Gross Area(m²)	Nett Area	Shelter Code			ılation /pe	Opening
Insulated Plane	External F Roof	Plane Plast	erboard, i	nsulated at ceiling lev	-).09	9.00	37.03	(m²) 0.00	None		Enter	Gross rea	0.00
10.2 Internal Ceilings														
Description Ground Floor		Storey Lowest	occupied	Construction Plasterboard ceilir	ng, carpet	ed chip	board fl	oor						.03
11.0 Heat Loss Floors			_		_					_				_
Description	Туре	•	Index	Construction				J-Value W/m²K)		Iter Code		Shelter Factor	(kJ/m²l	
Ground Floor	Ground Floo	r - Solid Lowes	t occupied	Suspended concrete flo	or, carpeted			0.12		None		0.00	75.00	37.03



11.2 Internal Floors Description		Storey Index	Cons	struction						Kappa (kJ/m²K)	Area (m²
First Floor			Plast	erboard ceiling, carpet	ed chipboard fl	oor				9.00	37.03
12.0 Opening Types Description	Data Source	Туре		Glazing		Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Solid Doors Windows	Manufacturer BFRC, BSI or CERTASS data		r	Double Low-E So	oft 0.05	Сар	туре	0.46	Туре	i actor	1.10 1.30
Patio Doors	BFRC, BSI or CERTASS data	Window		Double Low-E So	oft 0.05			0.46			1.30
Name Front Door Front Windows RH Windows Rear Windows Rear Patio Doors	Opening Ty Solid Doors Windows Windows Windows Patio Doors	pe	: : :	Location External Wall External Wall External Wall External Wall External Wall		Orient Ea Ea No We We	est rth est	Area 2.1 3.7 0.6 3.6 3.0	5 79 60 65	Pi	tch
14.0 Conservatory				None				7			
15.0 Draught Proofing				100] %			
16.0 Draught Lobby				No							
17.0 Thermal Bridging 17.1 List of Bridges			C	Calculate Bridges							
Bridge Type E2 Other lintels (includin E3 Sill E4 Jamb E5 Ground floor (normal E6 Intermediate floor wit E10 Eaves (insulation at E12 Gable (insulation at E16 Corner (normal) E18 Party wall between P1 Party wall - Ground fl P2 Party wall - Intermedi P4 Party wall - Roof (insulation P4 Party wall - Roof (insulation)) hin a dwelling ceiling level) ceiling level) dwellings oor ate floor within a	dwelling	Indep Indep Indep Indep Indep Indep Indep Indep Indep Indep Indep Table	ce Type pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed	Length 9.44 6.94 26.40 17.37 17.37 9.83 7.54 9.80 9.80 7.54 7.54 7.54	Psi 0.08 0.03 0.02 0.09 0.03 0.04 0.05 -0.00 0.03 0.00	Adjusted 0.08 0.03 0.02 0.09 0.03 0.04 0.04 0.05 -0.00 0.03 0.00 0.02	Reference	9:		Importer No No No No No No No No No No No No No
Y-value			C).03				W/m²K			
18.0 Pressure Testing			\ <u>\</u>	/es				7			
Designed AP₅o			4	1.50				m³/(h.n	n²) @ 50 P	a	
Test Method			E	Blower Door							
19.0 Mechanical Ventilation	n										
Mechanical Ventilation								_			
Mechanical Ventila	•	ent		/es				_			
Approved Installati				No				_			
Mechanical Ventila	tion data Type			Database				_			
Туре				Mechanical extract ven	tilation - decen	tralised		_			
MV Reference Nur	nber			500787				_			
Duct Type				Flexible				_			
Wet Rooms				1							
0.13 In R Kitcl 0.11 In R 0.00 In D 0.00 In D 0.00 Thrc Kitcl 0.10 Thrc	/Room Type oom Fan (hen oom Fan Other 2 Room uct Fan Other (Room out Fan Other (Room out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other out Fan Other Fan	Count) 2))									
Othe	er Wet Room	•									



21.0 Fixed Cooling System	No				
22.0 Lighting					
No Fixed Lighting	No				
	Name Downlights	Efficacy 800.00	Power 28	Capacity 22400	Count 8
	Spotlights	90.00	9	810	8
24.0 Main Heating 1	Database				
Percentage of Heat	100.00			%	
Database Ref. No.	104568				
Fuel Type	Electricity				
In Winter	0.00				
In Summer	0.00				
Model Name	Ecodan 5.0 kW				
Manufacturer	Mitsubishi Electr	ric Europe B.V.			
System Type	Heat Pump				
Controls SAP Code	2207				
PCDF Controls	0				
Is MHS Pumped	Pump in heated	space			
Heating Pump Age	2013 or later				
Heat Emitter	Radiators				
Flow Temperature	Enter value]	
Flow Temperature Value	55.00				
25.0 Main Heating 2	None]	
26.0 Heat Networks	None				
Heat Source Fuel Type Heating U	se Efficiency	Percentage Of H Heat	Power	ectrical Fuel Facto	or Efficiency type
Heat source 1			Ratio		
Heat source 2 Heat source 3					
Heat source 4 Heat source 5					
28.0 Water Heating					
Water Heating	Main Heating 1				
SAP Code	901			Ī	
Flue Gas Heat Recovery System	No			Ī	
Waste Water Heat Recovery Instantaneous System 1	No			ĺ	
Waste Water Heat Recovery Instantaneous System 2	No			<u></u>	
Waste Water Heat Recovery Storage System	No			- -	
Solar Panel	No]	
Water use <= 125 litres/person/day	Yes]	
Cold Water Source	From mains			_]	
Bath Count	1			_]	
Immersion Only Heating Hot Water	Yes			_]	
	163				
28.1 Showers Description Shower Typ	e	Flow R [l/mir	tate Rated Power (Connected Connec	ted To
28.3 Waste Water Heat Recovery System		•	<u> </u>		
29.0 Hot Water Cylinder	Hot Water Cyling	der			
Cylinder Stat	Yes				
Cylinder In Heated Space	Yes				
Independent Time Control	Yes			<u></u>	
Faugain inna aannai				_	



Insulation Type	Measured Loss	
Cylinder Volume	150.00] L
Loss	1.23	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None]

Recommendations Lower cost measures None

Further measures to achieve even higher standards

Timbert Cook	Timbed services nearly ser	Katings after improvement					
Typical Cost	Typical savings per year	SAP rating	Environmental Impact				
£4,000 - £6,000	£65	B 81	A 96				
£3,500 - £5,500	£154	B 88	A 97				
		0	0				



Property Reference	008517	7 - HT - Delamare	e - Det					Issu	ied on Date	16/03	3/2023	
Assessment Reference	As Des	signed - As			Pro	р Туре	Ref	HT - [Delamare - Det			
Property	Plot , L	and Nr Rectory F	arm , Bamber Bridge									
SAP Rating			76 C	DER		5.53			TER	44	1.70	
Environmental				% DER	< TED	5.50	,		IER			
CO ₂ Emissions (t/year)			95 A		V IER	44 -	70		TEEE		2.74	
			0.47	DFEE	C < TCC	41.7	6		TFEE		4.56	
Compliance Check			See BREL	% DFEI	= < IFE	_			TDED		28	_
% DPER < TPER			5.23	DPER		58.0	18		TPER	6	1.29	
Assessor Details	Mr. Benjam	in Wood							Assessor ID	P	717-0001	
Client	Persimmon	Homes Severn \	/alley , null									
SUMMARY FOR INPL	UT DATA FO	R: New Build	(As Designed)									
Orientation			East									
			4					=				
Property Tenture			6					==				
Transaction Type			6 Suburban									
Terrain Type			Suburban									
1.0 Property Type			House, Detached									
2.0 Number of Storeys			2									
3.0 Date Built			2021									
4.0 Sheltered Sides			2									
5.0 Sunlight/Shade			Average or unknown									
6.0 Thermal Mass Parame	eter		Precise calculation									
7.0 Electricity Tariff			Standard									
Smart electricity meter	fitted		No					一				
Smart gas meter fitted			No					一				
7.0 Measurements												
7.0 Weasurements		Hea	t Loss Perimeter	Interna	l Floor	Area	Unhe			verage	Storey Hei	ight
	Grou	und floor:	32.19 m		6.60 m²			Are 17.37			2.55 m	
	1s	st Storey:	29.73 m	53	3.97 m ²						2.33 m	
8.0 Living Area			13.70						m²			
9.0 External Walls												
9.0 External Walls Description	Туре	Construction		U-Value		Gross	Nett	Shelter	Shelter	Opening	gs Area Calcu	
Description				(W/m²K)	(kJ/m²K)	Area(m²)	Area (m²)	Res			Туре	•
	Type Timber Frame Timber Frame	Timber framed wall	(one layer of plasterboard) (two layers of plasterboard)				Area		Shelter None Garage Single 1 Outside	Opening 16.47 0.00		s Area
Description External Wall	Timber Frame	Timber framed wall	(one layer of plasterboard)	(W/m²K) 0.21	(kJ/m²K) 9.00	Area(m²)	Area (m²) 111.28	Res 0.00	None Garage Single 1	16.47	Type Enter Gross	s Area
Description External Wall Wall to Garage	Timber Frame	Timber framed wall	(one layer of plasterboard) (two layers of plasterboard)	(W/m²K) 0.21	(kJ/m²K) 9.00	Area(m²)	Area (m²) 111.28	Res 0.00	None Garage Single 1	16.47 0.00	Type Enter Gross Enter Gross	s Area s Area
Description External Wall Wall to Garage 9.2 Internal Walls Description Ground Floor	Timber Frame	Timber framed wall Timber framed wall Construc	(one layer of plasterboard) (two layers of plasterboard)	(W/m²K) 0.21	(kJ/m²K) 9.00	Area(m²)	Area (m²) 111.28	Res 0.00	None Garage Single 1	16.47 0.00 Ka (kJ /i	Enter Gross Enter Gross Enter Gross ppa Area m ² K)	s Area s Area
Description External Wall Wall to Garage 9.2 Internal Walls Description	Timber Frame	Timber framed wall Timber framed wall Construct Plasterboa	(one layer of plasterboard) (two layers of plasterboard) tion	(W/m²K) 0.21	(kJ/m²K) 9.00	Area(m²)	Area (m²) 111.28	Res 0.00	None Garage Single 1	16.47 0.00 Ka j (kJ /i	Enter Gross Enter Gross Enter Gross ppa Area m²K) 00 56.	s Area s Area
Description External Wall Wall to Garage 9.2 Internal Walls Description Ground Floor First Floor 10.0 External Roofs	Timber Frame Timber Frame	Timber framed wall Timber framed wall Construct Plasterbook	(one layer of plasterboard) (two layers of plasterboard) tion ard on timber frame ard on timber frame	(W/m²K) 0.21 0.26	9.00 18.00	127.75 23.45	Area (m²) 111.28 23.45	Res 0.00 0.35	None Garage Single 1 Outside	16.47 0.00 Ka (kJ /i 9.	Enter Gross Enter Gross Enter Gross ppa Area m²K) 00 56. 00 133	s Areas
Description External Wall Wall to Garage 9.2 Internal Walls Description Ground Floor First Floor	Timber Frame	Timber framed wall Timber framed wall Construct Plasterboa	(one layer of plasterboard) (two layers of plasterboard) tion ard on timber frame ard on timber frame	(W/m²K) 0.21 0.26	9.00 18.00	127.75 23.45	Area (m²) 111.28 23.45	Res 0.00 0.35	None Garage Single 1	16.47 0.00 Ka (kJ /i 9.	Enter Gross Enter Gross Enter Gross Pppa Area m²K) 00 56. 00 133	s Areas
Description External Wall Wall to Garage 9.2 Internal Walls Description Ground Floor First Floor 10.0 External Roofs	Timber Frame Timber Frame Type	Timber framed wall Timber framed wall Construct Plasterboa Plasterboa Construction	(one layer of plasterboard) (two layers of plasterboard) tion ard on timber frame ard on timber frame	(W/m²K) 0.21 0.26	9.00 18.00 /alue K	127.75 23.45	Area (m²) 111.28 23.45	Res 0.00 0.35	None Garage Single 1 Outside Shelter Shelt Code Factor	16.47 0.00 Kaj (kJ/i 9. 9. er Calcu	Enter Gross Enter Gross Enter Gross Pppa Area m²K) 00 56, 00 133 ulationOper //pe	s Area s Area a (m²
Description External Wall Wall to Garage 9.2 Internal Walls Description Ground Floor First Floor 10.0 External Roofs Description Insulated Plane 10.2 Internal Ceilings Description	Timber Frame Timber Frame Type External Plan	Timber framed wall Timber framed wall Construct Plasterboa Plasterboa Construction Plasterboard,	(one layer of plasterboard) (two layers of plasterboard) tion ard on timber frame ard on timber frame insulated at ceiling lev	(W/m²K) 0.21 0.26 U-\ (W/	9.00 18.00 /alue K /m²K)(k.	127.75 23.45 (appa J/m²K)A	Area (m²) 111.28 23.45 Gross Area(m²)	Nett Area (m²)	None Garage Single 1 Outside Shelter Shelt Code Factor	16.47 0.00 Kaj (kJ/i 9. 9. er Calcu	Enter Gross Enter Gross Enter Gross Pppa Area m²K) 00 56, 00 133 ulationOper /pe Gross 0. rea Area (m²	s Area s Area a (m² 10 3.67 ning
Description External Wall Wall to Garage 9.2 Internal Walls Description Ground Floor First Floor 10.0 External Roofs Description Insulated Plane 10.2 Internal Ceilings Description Internal Ceiling	Timber Frame Timber Frame Type External Plan	Timber framed wall Timber framed wall Construct Plasterboa Plasterboa Construction Plasterboard,	(one layer of plasterboard) (two layers of plasterboard) tion ard on timber frame ard on timber frame insulated at ceiling lev	(W/m²K) 0.21 0.26 U-\ (W/	9.00 18.00 /alue K /m²K)(k.	127.75 23.45 (appa J/m²K)A	Area (m²) 111.28 23.45 Gross Area(m²)	Nett Area (m²)	None Garage Single 1 Outside Shelter Shelt Code Factor	16.47 0.00 Kaj (kJ/i 9. 9. er Calcu	Enter Gross Enter Gross ppa Area m²K) 00 56. 00 133 ulationOper /pe Gross 0.	s Area s Area a (m² 10 3.67 ning
Description External Wall Wall to Garage 9.2 Internal Walls Description Ground Floor First Floor 10.0 External Roofs Description Insulated Plane 10.2 Internal Ceilings Description	Timber Frame Timber Frame Type External Plan	Timber framed wall Timber framed wall Construct Plasterboa Plasterboa Construction Plasterboard,	(one layer of plasterboard) (two layers of plasterboard) tion ard on timber frame ard on timber frame insulated at ceiling lev	(W/m²K) 0.21 0.26 U-\ (W/	9.00 18.00 /alue K /m²K)(k.	Area(m²) 127.75 23.45 Cappa J/m²K)A 9.00	Area (m²) 111.28 23.45 Gross Area(m²)	Nett Area (m²) 0.00	None Garage Single 1 Outside Shelter Shelt Code Factor	16.47 0.00 Kaj (kJ/i 9. 9. er Calcu	Enter Gross Enter Gross Enter Gross Pppa Area m²K) 00 56, 00 133 ulationOper /pe Gross 0. rea Area (m²	s Areas



Description		Storey Index	Con	struction						Kappa (kJ/m²K)	Area (m
Internal Floor			Plas	terboard ceiling, carpet	ed chipboard f	loor				9.00	34.79
2.0 Opening Type	s										
Description	Data Source	Туре		Glazing		Glazing	Filling	G-value	Frame	Frame	U Valu
Windows	BFRC, BSI or			Double Low-E So	oft 0.05	Gap	Type	0.46	Type	Factor	(W/m²K 1.30
Solid Door	CERTASS dat Manufacturer	Solid Doo	or								1.10
Patio Doors	BFRC, BSI or CERTASS data	Window		Double Low-E So	oft 0.05			0.46			1.30
13.0 Openings											
Name Front Windows Front Door Rear Windows Patio Door RH Windows LH Window	Opening Ty Windows Solid Door Windows Patio Doors Windows Windows			Location External Wall External Wall External Wall External Wall External Wall External Wall		Orient Eas Eas We We Nor Sou	st st st st th	Area 4.6 2.1 5.1 3.0 0.9 0.4	7 5 1 9 7	Pi	tch
14 0 Concomistori				None				7			
14.0 Conservatory			L	None							
15.0 Draught Proof	fing		Į	100				%			
16.0 Draught Lobb	у		L	No							
17.0 Thermal Bridg	ina		Г	Calculate Bridges							
า7.0 Thermal Bridge 17.1 List of Bridge	. •		L	Calculate Bridges							
E3 Sill E4 Jamb E5 Ground floor E5 Ground floor E20 Exposed flo E21 Exposed flo E6 Intermediate E10 Eaves (insu E24 Eaves (insu E12 Gable (insu E16 Corner (nor E16 Corner (nor E17 Corner (inv external area)	(normal) oor (normal) oor (inverted) floor within a dwelling llation at ceiling level) llation at ceiling level - inv llation at ceiling level) mal)	verted) ater than	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed ex 1 - Default pendently assessed ex 1 - Default pendently assessed ex 1 - Default pendently assessed ex 1 - Default pendently assessed ex 1 - Default pendently assessed ex 1 - Default pendently assessed ex 1 - Default pendently assessed ex 1 - Default	Length 12.28 9.79 33.00 22.98 9.21 9.21 19.05 14.08 1.47 19.58 19.50 5.09 2.55	Psi 0.08 0.03 0.02 0.09 0.09 0.08 -0.01 0.00 0.04 0.15 0.04 0.05 0.18 -0.04 0.00	Adjusted 0.08 0.03 0.02 0.09 0.09 0.08 -0.01 0.00 0.04 0.15 0.04 0.05 0.18 -0.04	Reference	:		Importe No No No No No No No No No No No No No
Y-value			[0.03				W/m²K			
18.0 Pressure Test	ing			Yes				\neg			
Designed AP ₅₀			i	4.50				m³/(h m	n²) @ 50 Pa	a	
Test Method			- 7	Blower Door					, ()	-	
rest Method			L	blower Door							
19.0 Mechanical Ve	entilation										
Mechanical Ver	ntilation							_			
Mechanica	al Ventilation System Pres	sent	l	Yes							
Approved	Installation		[No							
Mechanica	al Ventilation data Type			Database							
Type			Ī	Mechanical extract ven	tilation - decer	ntralised					
* *	ence Number		i	500787							
			- 1					=			
Duct Type				Flexible							
Wet Room	IS			4							
19.1 Mechanical ex	tract ventilation - Dece	ntralised									
SFP 0.13 0.11 0.00 0.00	In Room Fan Kitchen In Room Fan Other Wet Room In Duct Fan Kitchen In Duct Fan Other	0									
0.10	Wet Room Through Wall Fan	1									
0.10	Kitchen Through Wall Fan										

Page 2 of 4 SAP 10 Online 2.4.5



Other Wet Room 20.0 Fans, Open Fireplaces, Flues No 21.0 Fixed Cooling System 22.0 Lighting No Fixed Lighting Capacity Count Downlights Spotlights 9 80.00 2000 90.00 9 810 24.0 Main Heating 1 Database Percentage of Heat 100.00 % Database Ref. No. 104568 Electricity Fuel Type In Winter 0.00 In Summer 0.00 Ecodan 5.0 kW Model Name Manufacturer Mitsubishi Electric Europe B.V. System Type Heat Pump Controls SAP Code 2207 **PCDF Controls** 0 Is MHS Pumped Pump in heated space Heating Pump Age 2013 or later Heat Emitter Radiators Flow Temperature Enter value 55.00 Flow Temperature Value 25.0 Main Heating 2 None 26.0 Heat Networks None **Fuel Type Heating Use** Efficiency Percentage Of **Fuel Factor** Efficiency type Power Ratio Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating Main Heating 1 SAP Code 901 Flue Gas Heat Recovery System No Waste Water Heat Recovery Instantaneous System 1 No Waste Water Heat Recovery Instantaneous System 2 No Waste Water Heat Recovery Storage System No Solar Panel No Water use <= 125 litres/person/day Yes **Cold Water Source** From mains **Bath Count** 1 Yes Immersion Only Heating Hot Water 28.1 Showers Description **Shower Type** Flow Rate Rated Power Connected Connected To [l/min] 28.3 Waste Water Heat Recovery System Hot Water Cylinder 29.0 Hot Water Cylinder Cylinder Stat Yes



Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	150.00	L
Loss	1.23	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations

Lower cost measures None

Further measures to achieve even higher standards

Ratings after improvement

SAP rating Environmental Impact

C 78 A 96

B 85 A 97

0 0 Typical Cost Typical savings per year £4,000 - £6,000 £3,500 - £5,500 £66 £168



Property Reference	008517	- HT - Saunton -	SEMI					Issue	d on Da	ate	23/03/2	2023
Assessment Reference	As Desi	gned - As			Prop	Туре	Ref	HT - Sa	unton -	SEMI		
Property	Plot , La	and Nr Rectory F	arm									
SAP Rating			78 C	DER		4.92			TER		11.0	4
Environmental			96 A	% DER	< TER	1.02					55.4	
CO ₂ Emissions (t/year)			0.45	DFEE		34.8	Ω.		TFEE		35.1	
Compliance Check			See BREL		E < TFEI						0.85	
% DPER < TPER			10.31	DPER		51.8	3		TPER		57.7	
Assessor Details	Mr. Daniemic	- \\/ d							Assess	or ID	DZ4	7 0004
	Mr. Benjamir								ASSESS	טו וט	P/I	7-0001
Client			ersimmon Severn Vall	еу								
SUMMARY FOR INP	UT DATA FOR	: New Build ((As Designed)									
Orientation			East									
Property Tenture			ND									
Transaction Type			6									
Terrain Type			Suburban									
1.0 Property Type			House, Semi-Detach	ned								
2.0 Number of Storeys			3									
3.0 Date Built			2023									
4.0 Sheltered Sides			2									
5.0 Sunlight/Shade			Average or unknowr	1								
6.0 Thermal Mass Param	eter		Precise calculation									
7.0 Electricity Tariff			Standard									
Smart electricity meter	fitted		No									
Smart gas meter fitted			No									
7.0 Measurements												
			Ground floo 1st Store 2nd Store	r: y:	Loss Pe 17.67 r 16.20 r 16.20 r	n n	r Inte	34.83 32.75 27.72	m² m²	a A	2. 2.	storey Heigh 33 m 57 m 33 m
8.0 Living Area			15.18					1	m²			
9.0 External Walls Description	T	Construction				_	Nett 5	Shelter	Shelt	er C	Openings /	Area Calculatio Type
-	Туре	Construction		U-Value (W/m²K)		Gross Area(m²)	Area	Res				
External Wall Dormer Wall Wall to Roof Void	Timber Frame	Timber framed wall (Timber framed wall (one layer of plasterboard) one layer of plasterboard) one layer of plasterboard)		Kappa (kJ/m²K) A 9.00 9.00 9.00			0.00 0.00 0.00	None None None	е	1.44	Enter Gross Are Enter Gross Are Enter Gross Are
External Wall Dormer Wall Wall to Roof Void	Timber Frame	Timber framed wall (Timber framed wall (one layer of plasterboard)	(W/m²K) 0.21 0.44	9.00 9.00	Area(m²) 105.75 5.78	Area (m²) 93.42 4.34	0.00 0.00	None	е	1.44	Enter Gross Are Enter Gross Are
External Wall Dormer Wall	Timber Frame	Timber framed wall (Timber framed wall (one layer of plasterboard) one layer of plasterboard)	(W/m²K) 0.21 0.44	9.00 9.00	Area(m²) 105.75 5.78	Area (m²) 93.42 4.34 7.76	0.00 0.00 0.00 Kappa	None None Area	a She	1.44 0.00	Enter Gross Are Enter Gross Are
External Wall Dormer Wall Wall to Roof Void 9.1 Party Walls	Timber Frame Timber Frame Timber Frame	Timber framed wall (Timber framed wall (Timber framed wall (Construct with Double pl	one layer of plasterboard) one layer of plasterboard)	(W/m²K) 0.21 0.44 0.11	9.00 9.00 9.00 9.00	Area(m²) 105.75 5.78 7.76	Area (m²) 93.42 4.34 7.76	0.00 0.00 0.00 Kappa	None None Area	a She	1.44 0.00	Enter Gross Are Enter Gross Are Enter Gross Are
External Wall Dormer Wall Wall to Roof Void 9.1 Party Walls Description	Timber Frame Timber Frame Timber Frame Type Filled Cavity	Timber framed wall (Timber framed wall (Timber framed wall (Construct with Double pl	one layer of plasterboard) one layer of plasterboard) etion asterboard on both si	(W/m²K) 0.21 0.44 0.11	9.00 9.00 9.00 9.00	Area(m²) 105.75 5.78 7.76	Area (m²) 93.42 4.34 7.76 U-Value (W/m²K)	0.00 0.00 0.00 Kappa (kJ/m²K	Area) (m²)	a She	1.44 0.00	Enter Gross Are Enter Gross Are Enter Gross Are Shelter
External Wall Dormer Wall Wall to Roof Void 9.1 Party Walls Description Party Wall	Timber Frame Timber Frame Timber Frame Type Filled Cavity	Timber framed wall (Timber framed wall (Timber framed wall (Construct with Double pl	one layer of plasterboard) one layer of plasterboard) ction asterboard on both si out sheathing board	(W/m²K) 0.21 0.44 0.11	9.00 9.00 9.00 9.00	Area(m²) 105.75 5.78 7.76	Area (m²) 93.42 4.34 7.76 U-Value (W/m²K)	0.00 0.00 0.00 Kappa (kJ/m²K	Area) (m²)	a She	1.44 0.00	Enter Gross Are Enter Gross Are Enter Gross Are Enter Gross Are Shelter None
External Wall Dormer Wall Wall to Roof Void 9.1 Party Walls Description Party Wall	Timber Frame Timber Frame Timber Frame Type Filled Cavity	Timber framed wall (Timber framed wall (Timber framed wall (Timber framed wall (Construct with Double pl with/witho Construct Plasterboa Plasterboa	one layer of plasterboard) one layer of plasterboard) ction asterboard on both si out sheathing board	(W/m²K) 0.21 0.44 0.11	9.00 9.00 9.00 9.00	Area(m²) 105.75 5.78 7.76	Area (m²) 93.42 4.34 7.76 U-Value (W/m²K)	0.00 0.00 0.00 Kappa (kJ/m²K	Area) (m²)	a She	1.44 0.00	Enter Gross Are Enter Gross Are Enter Gross Are Enter Gross Are Shelter None Area (m K) 52.66 57.05
External Wall Dormer Wall Wall to Roof Void 9.1 Party Walls Description Party Wall 9.2 Internal Walls Description Ground Floor First Floor Second Floor	Timber Frame Timber Frame Timber Frame Type Filled Cavity	Timber framed wall (Timber framed wall (Timber framed wall (Timber framed wall (Construct with Double pl with/witho Construct Plasterboa Plasterboa	one layer of plasterboard) one layer of plasterboard) etion asterboard on both si- out sheathing board ion rd on timber frame rd on timber frame	0.21 0.44 0.11 des, twin t	9.00 9.00 9.00 9.00 9.00	105.75 5.78 7.76	Area (m²) 93.42 4.34 7.76 U-Value (W/m²K) 0.00	0.00 0.00 0.00 0.00 Kappa (kJ/m²K 20.00	Area) (m²) 65.65	a She	1.44 0.00 elter es Kapp (kJ/m² 9.00 9.00 9.00	Enter Gross Are Enter Gross Are Enter Gross Are Enter Gross Are Shelter None Area (m K) 52.66 57.05 56.25
External Wall Dormer Wall Wall to Roof Void 9.1 Party Walls Description Party Wall 9.2 Internal Walls Description Ground Floor First Floor Second Floor 10.0 External Roofs	Timber Frame Timber Frame Timber Frame Type Filled Cavity Edge Sealin Type External Slope	Timber framed wall (in Timber framed wall (in	one layer of plasterboard) one layer of plasterboard) etion asterboard on both si- out sheathing board ion rd on timber frame rd on timber frame	(W/m²K) 0.21 0.44 0.11 des, twin t	9.00 9.00 9.00 9.00 9.00	105.75 5.78 7.76	Area (m²) 93.42 4.34 7.76 U-Value (W/m²K) 0.00	0.00 0.00 0.00 Kappa (kJ/m²K 20.00	Area) (m²) 65.65	Shelter	Kapp (kJ/m² 9.00 9.00 9.00 r Calcula	Enter Gross Are Enter Gross Are Enter Gross Are Enter Gross Are Shelter None a Area (m K) 52.66 57.05 56.25 ttionOpening e
External Wall Dormer Wall Wall to Roof Void 9.1 Party Walls Description Party Wall 9.2 Internal Walls Description Ground Floor First Floor Second Floor 10.0 External Roofs Description Insulated Slope 1st Floor Sheltered	Timber Frame Timber Frame Timber Frame Type Filled Cavity Edge Sealin Type External Slope Roof External Slope	Timber framed wall (in Timber framed wall (in	one layer of plasterboard) one layer of plasterboard) etion asterboard on both signates the second of the second o	(W/m²K) 0.21 0.44 0.11 des, twin t	9.00 9.00 9.00 9.00 9.00 9.00 9.00	105.75 5.78 7.76 ame	Area (m²) 93.42 4.34 7.76 U-Value (W/m²K) 0.00 Gross area (m²)	0.00 0.00 0.00 0.00 Kappa (kJ/m²K 20.00	Area) (m²) 65.65	Shelter	Kapp (kJ/m² 9.00 9.00 9.00 F Calcula Type Enter G Area Enter G	Enter Gross Are Enter Gross Are Enter Gross Are Enter Gross Are Shelter None a Area (m K) 52.66 57.05 56.25 tionOpening ross 1.35 a ross 0.00
External Wall Dormer Wall Wall to Roof Void 9.1 Party Walls Description Party Wall 9.2 Internal Walls Description Ground Floor First Floor Second Floor 10.0 External Roofs Description Insulated Slope	Timber Frame Timber Frame Timber Frame Type Filled Cavity Edge Sealin Type External Slope Roof	Timber framed wall (Timber framed wall (Timber framed wall (Timber framed wall (Construct With Double pl With/witho Construct Plasterboa Plasterboa Construction Plasterboard, in Pla	one layer of plasterboard) one layer of plasterboard) etion asterboard on both signates the second of the second o	U-\ (W/m²K) 0.21 0.44 0.11 des, twin t	9.00 9.00 9.00 9.00 9.00 9.00 4alue Kam²K)(kJ	105.75 5.78 7.76 ame	Area (m²) 93.42 4.34 7.76 U-Value (W/m²K) 0.00 Gross (rea(m²) 15.64	0.00 0.00 0.00 0.00 Kappa (kJ/m²K 20.00 Nett S Area (m²) 1.35 0.00	Area) (m²) 65.65	Shelter Factor	Kapp (kJ/m² 9.00 9.00 9.00 r Calcula Type Enter G Area	Enter Gross Are Enter Gross Are Enter Gross Are Enter Gross Are Shelter None a Area (m K) 52.66 57.05 56.25 ttionOpening a ross 0.00 a ross 0.00



Insulated Plane	Roof External Plane Roof	Plasterboa	ard, in	sulated at ceiling level	0.09	9.00 2.	09 0.0	00 None	0.00	Area Enter Gros Area	ss 0.00
10.2 Internal Ceilings											
Description	St	orey		Construction						Ar	ea (m²)
Ground Floor	Lo	west occu	ıpied	Plasterboard ceiling, ca	rpeted chip	board floor					32.75
First Floor	+1			Plasterboard ceiling, ca	rpeted chip	board floor				2	27.72
11.0 Heat Loss Floors											
Description	Туре	Storey Inde	x	Construction		U-Valı	ie	Shelter Code	,	Shelter Kap	pa Area (m
·		-				(W/m²	K)			Factor (kJ/n	n²K)
Ground Floor	Ground Floor - Solid	Lowest occu	pied	Suspended concrete floor, carp	peted	0.12		None		0.00 75.	00 34.83
11.2 Internal Floors											
Description		Storey	Con	struction							Area (m²
		Index								(kJ/m²K	,
First Floor Second Floor				erboard ceiling, carpeted erboard ceiling, carpeted						9.00 9.00	32.75 27.72
			rias	erboard ceiling, carpeted	Chippoard	1001					
12.0 Opening Types											
Description	Data Source	Type		Glazing		Glazing	F <u>i</u> lling	G-value	Frame		
Solid Doors	Manufacturer	Solid Doo				Gap	Type		Type	Factor	
Windows	BFRC, BSI or) [Double Low-E Soft	0.05			0.46			1.10 1.30
Williadillo	CERTASS data			Boablo Low L Con	0.00			0.10			1.00
Patio Doors	BFRC, BSI or			Double Low-E Soft	0.05			0.46			1.30
D filmber	CERTASS data			D	0.05			0.00		0.70	4.00
Rooflights	Manufacturer	Roof Win	dow	Double Low-E Soft	0.05			0.63		0.70	1.30
13.0 Openings											
Name	Opening Typ	ре		Location		Orienta	tion	Area	(m²)	P	itch
Front Door	Solid Doors			External Wall		Eas		2.1			
Front Windows	Windows			External Wall		Eas		3.3			
LH Windows	Windows			External Wall		Sout		0.6			
Rear Windows Rear Patio Doors	Windows Patio Doors			External Wall External Wall		Wes Wes		3.3 2.8			
Front Windows	Windows			Dormer Wall		Eas		1.4			
Rear RL	Rooflights			Insulated Slope		Wes		1.3			45
			-	·							
14.0 Conservatory			L	None							
15.0 Draught Proofing			Γ	100				%			
16.0 Draught Lobby			Ī	No				Ħ			
17.0 Thermal Bridging				Calculate Bridges							
17.1 List of Bridges											
Bridge Type			Sou	ce Type	Length	Psi	Adjusted	Reference	:		Importe
E2 Other lintels (including	ng other steel lintel	ls)		pendently assessed	8.62	0.08	0.08				No
E3 Sill				pendently assessed	6.25	0.03	0.03				No
E4 Jamb E5 Ground floor (norma					22.20		0.02				No
	.1\			pendently assessed		0.02	0.00				NI.
			Inde	pendently assessed	17.67	0.09	0.09				No No
E6 Intermediate floor wi	ithin a dwelling	erted)	Inde Inde	pendently assessed pendently assessed	17.67 30.98	0.09 0.03	0.03				No
E6 Intermediate floor wi E24 Eaves (insulation a	ithin a dwelling at ceiling level - inve	erted)	Inde Inde Table	pendently assessed pendently assessed e K1 - Default	17.67 30.98 1.43	0.09 0.03 0.15	0.03 0.15				No No
E6 Intermediate floor wi	ithin a dwelling at ceiling level - inve at rafter level)	erted)	Inde Inde Table Inde	pendently assessed pendently assessed	17.67 30.98	0.09 0.03	0.03				No
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal)	ithin a dwelling at ceiling level - inve at rafter level)	erted)	Inde Inde Table Inde Inde Inde	pendently assessed pendently assessed & K1 - Default pendently assessed pendently assessed pendently assessed	17.67 30.98 1.43 7.71 12.02 12.73	0.09 0.03 0.15 0.02 -0.00 0.05	0.03 0.15 0.02 -0.00 0.05				No No No No No
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (normal)	ithin a dwelling at ceiling level - inve at rafter level) at rafter level)	,	Inde Inde Table Inde Inde Inde Table	pendently assessed pendently assessed bendently assessed pendently assessed pendently assessed pendently assessed pendently assessed bendently assessed pendently assessed bendently ass	17.67 30.98 1.43 7.71 12.02 12.73 3.76	0.09 0.03 0.15 0.02 -0.00 0.05 0.18	0.03 0.15 0.02 -0.00 0.05 0.18				No No No No No No
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (normal) E17 Corner (inverted –	ithin a dwelling at ceiling level - inve at rafter level) at rafter level)	,	Inde Inde Table Inde Inde Inde Table	pendently assessed pendently assessed & K1 - Default pendently assessed pendently assessed pendently assessed	17.67 30.98 1.43 7.71 12.02 12.73	0.09 0.03 0.15 0.02 -0.00 0.05	0.03 0.15 0.02 -0.00 0.05				No No No No No
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (normal) E17 Corner (inverted – external area)	ithin a dwelling at ceiling level - inve at rafter level) at rafter level) internal area great	,	Inde Inde Inde Inde Inde Inde Inde	pendently assessed pendently assessed & K1 - Default pendently assessed pendently assessed pendently assessed & K1 - Default pendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04				No No No No No No
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (normal) E17 Corner (inverted – external area) E18 Party wall between	ithin a dwelling at ceiling level - inve at rafter level) at rafter level) at rafter level) internal area greate	,	Inde Inde Inde Inde Inde Inde Inde	pendently assessed pendently assessed et K1 - Default pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04				No No No No No No
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground	ithin a dwelling at ceiling level - inve at rafter level) at rafter level) it rafter level) internal area greate a dwellings floor	er than	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed pendently assessed at K1 - Default pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04				No No No No No No
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground 1 P2 Party wall - Intermec P4 Party wall - Roof (insulation)	ithin a dwelling at ceiling level - invet at rafter level) at rafter level) internal area greate a dwellings floor diate floor within a coulation at ceiling le	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02				No No No No No No No
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground of P2 Party wall - Intermed P4 Party wall - Roof (insulation)	ithin a dwelling at ceiling level - invent at rafter level) at rafter level) internal area greate a dwellings floor diate floor within a coulation at ceiling lesulation at rafter level	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed bendently assessed ext - Default bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed bendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09				No No No No No No No No No
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground of P2 Party wall - Intermec P4 Party wall - Roof (ins P5 Party wall - Roof (ins R1 Head of roof window	ithin a dwelling at ceiling level - invent at rafter level) at rafter level) internal area greate a dwellings floor diate floor within a coulation at ceiling lesulation at rafter level	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed bendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06				No No No No No No No No No No
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground P2 Party wall - Intermed P4 Party wall - Roof (ins P5 Party wall - Roof (ins P5 Party wall - Roof (ins R1 Head of roof window R2 Sill of roof window	ithin a dwelling at ceiling level - invent at rafter level) at rafter level) internal area greate a dwellings floor diate floor within a could sulation at ceiling level	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed pendently assessed bendently assessed bendently assessed pendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34 2.34	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06				No No No No No No No No No No No No No N
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground o P2 Party wall - Roof (insulation of the P4 Party wall - Roof (insulation of the P5 Party wall - Roof (insulation of the R1 Head of roof window R2 Sill of roof window R3 Jamb of roof window	ithin a dwelling at ceiling level - invent at rafter level) at rafter level) internal area greate a dwellings floor diate floor within a could sulation at ceiling les sulation at rafter level	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed bendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34 2.34	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06				No No No No No No No No No No No No No N
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground P2 Party wall - Intermed P4 Party wall - Roof (ins P5 Party wall - Roof (ins P5 Party wall - Roof (ins R1 Head of roof window R2 Sill of roof window	ithin a dwelling at ceiling level - invent at rafter level) at rafter level) internal area greate a dwellings floor diate floor within a consulation at ceiling les sulation at rafter level w ng)	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed pendently assessed bendently assessed bendently assessed pendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34 2.34	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06				No No No No No No No No No No No No No N
E6 Intermediate floor wi E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground P2 Party wall - Intermec P4 Party wall - Roof (ins P5 Party wall - Roof (ins R1 Head of roof window R2 Sill of roof window R3 Jamb of roof window R4 Ridge (vaulted ceilin R7 Flat ceiling (inverted R9 Roof to wall (flat ceil	ithin a dwelling at ceiling level - invet at rafter level) at rafter level) internal area greate a dwellings floor diate floor within a e sulation at ceiling le sulation at rafter lev v ng) ling)	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed bendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34 2.34 4.76 3.85 7.71 4.96	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.06 0.12 -0.02	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.09 0.06 0.06 0.06 0.12 -0.02				No No No No No No No No No No No No No N
E6 Intermediate floor wie E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (normal) E17 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground P2 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof window R5 P6 P6 (vaulted ceiling R7 F1 Ceiling (inverted R9 Roof to wall (f1at ceiling E10 Eaves (insulation p5 P6 P6 P6 P6 P6 P6 P6 P6 P6 P6 P6 P6 P6	ithin a dwelling at ceiling level - involute rafter level) at rafter level) internal area greate a dwellings floor diate floor within a coulation at ceiling level w y y y t) ling) at ceiling level)	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed bendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34 4.76 3.85 7.71 4.96 1.44	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.12 -0.02 0.02 0.02	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.06 0.12 -0.02 0.02				No No No No No No No No No No No No No N
E6 Intermediate floor wie E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (normal) E17 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground P2 Party wall - Roof (insulation a E18 Gable (vaulted ceiling R7 Flat ceiling (inverted R9 Roof to wall (flat ceil E10 Eaves (insulation a E12 Gable (insulation a	ithin a dwelling at ceiling level - involute rafter level) at rafter level) internal area greate a dwellings floor diate floor within a coulation at ceiling level w y y y t) ling) at ceiling level)	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed pendently assessed exit - Default pendently assessed pendently assesse	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34 2.34 4.76 3.85 7.71 4.96	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.06 0.12 -0.02	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.09 0.06 0.06 0.06 0.12 -0.02				No No No No No No No No No No No No No N
E6 Intermediate floor wie E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (normal) E17 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground P2 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof (insulation P5 Party wall - Roof window R5 P6 P6 (vaulted ceiling R7 F1 Ceiling (inverted R9 Roof to wall (f1at ceiling E10 Eaves (insulation p5 P6 P6 P6 P6 P6 P6 P6 P6 P6 P6 P6 P6 P6	ithin a dwelling at ceiling level - involute rafter level) at rafter level) internal area greate a dwellings floor diate floor within a coulation at ceiling level w y y y t) ling) at ceiling level)	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed bendently assessed	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34 4.76 3.85 7.71 4.96 1.44	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.12 -0.02 0.02 0.02	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.06 0.12 -0.02 0.02	W/m²K			No No No No No No No No No No No No No N
E6 Intermediate floor wie E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (normal) E17 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground P2 Party wall - Roof (insulation a E18 Gable (vaulted ceiling R7 Flat ceiling (inverted R9 Roof to wall (flat ceil E10 Eaves (insulation a E12 Gable (insulation a	ithin a dwelling at ceiling level - involute rafter level) at rafter level) internal area greate a dwellings floor diate floor within a coulation at ceiling level w y y y t) ling) at ceiling level)	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed pendently assessed exit - Default pendently assessed pendently assesse	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34 4.76 3.85 7.71 4.96 1.44	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.12 -0.02 0.02 0.02	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.06 0.12 -0.02 0.02	W/m²K			No No No No No No No No No No No No No N
E6 Intermediate floor wie E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (normal) E17 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground P2 Party wall - Roof (insulation a E18 Gable (vaulted ceiling R7 Flat ceiling (inverted R9 Roof to wall (flat ceil E10 Eaves (insulation a E12 Gable (insulation a	ithin a dwelling at ceiling level - involute rafter level) at rafter level) internal area greate a dwellings floor diate floor within a coulation at ceiling level w y y y t) ling) at ceiling level)	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed bendently ass	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34 4.76 3.85 7.71 4.96 1.44	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.12 -0.02 0.02 0.02	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.06 0.12 -0.02 0.02	<u></u>	n²) @ 50	Pa	No No No No No No No No No No No No No N
E6 Intermediate floor wie E24 Eaves (insulation a E11 Eaves (insulation a E13 Gable (insulation a E16 Corner (normal) E16 Corner (inverted – external area) E18 Party wall between P1 Party wall - Ground P2 Party wall - Intermec P4 Party wall - Roof (insulation a E18 Daty wall - Roof (insulation) E18 Daty wall - Roof (insulation) E18 Daty wall - Roof (insulation) E18 Daty wall - Roof (insulation) E18 Daty wall - Roof (insulation) E18 Daty wall - Roof (insulation) E18 Daty wall - Roof (insulation) E19 Gable (insulation) E12 Gable (insulation) E12 Gable (insulation) E18.0 Pressure Testing	ithin a dwelling at ceiling level - involute rafter level) at rafter level) internal area greate a dwellings floor diate floor within a coulation at ceiling level w y y y t) ling) at ceiling level)	er than dwelling evel)	Inde Inde Inde Inde Inde Inde Inde Inde	pendently assessed bendently ass	17.67 30.98 1.43 7.71 12.02 12.73 3.76 2.33 10.40 9.96 16.99 1.46 12.02 2.34 4.76 3.85 7.71 4.96 1.44	0.09 0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.12 -0.02 0.02 0.02	0.03 0.15 0.02 -0.00 0.05 0.18 -0.04 -0.00 0.03 0.00 0.02 0.09 0.06 0.06 0.06 0.12 -0.02 0.02	<u></u>		Pa	No No No No No No No No No No No No No N

Mechanical Ventilation



Mecha	anical Ventilation System Present	Yes				
Approv	ved Installation	No				
Mecha	anical Ventilation data Type	Database			Ī	
Туре		Mechanical extract	ventilation - decentr	ralised	Ī	
	eference Number	500787			ī	
Duct T	ype	Flexible			ī	
Wet Ro		4			i	
SFP 0.13 0.11 0.00 0.00	al extract ventilation - Decentralised Fan/Room Type Count In Room Fan 0 Kitchen In Room Fan Other 2 Wet Room In Duct Fan Kitchen 0 In Duct Fan Other 0 Wet Room Wet Room					
0.10 0.10	Through Wall Fan 1 Kitchen Through Wall Fan 1 Other Wet Room					
20.0 Fans. Ope	n Fireplaces, Flues					
		Na				
21.0 Fixed Coo	iing system	No				
22.0 Lighting	all Atomic	N.			٦	
No Fixed Lig	gnting	No Name Downlights Spotlights	Efficacy 80.00 90.00	Power 28 9	Capacity 2240 810	Count 10 8
24.0 Main Heati	ing 1	Database			7	
Percentage	of Heat	100.00				
Database R	ef. No.	104568			Ī	
Fuel Type		Electricity			- Ī	
In Win	ter	0.00			- Ī	
In Sum	nmer	0.00			ī	
Model Name	9	Ecodan 5.0 kW			ī	
Manufacture		Mitsubishi Electric I	Europe B.V.		i	
System Type		Heat Pump			<u> </u>	
Controls SA		2207			<u> </u>	
PCDF Contr		0			<u> </u>	
Is MHS Pum		Pump in heated spa	are		<u></u>	
Heating Pun		2013 or later	100		_	
Heat Emitter		Radiators			_ _	
					_ _	
Flow Tempe		Enter value			_ _	
Flow Tempe	erature value	55.00				
25.0 Main Heati		None]	
26.0 Heat Netw	orks	None				
	Heat Source Fuel Type Heatin	g Use Efficiency Pe	ercentage Of He Heat	eat Heat Eld Power Ratio	ectrical Fuel Facto	r Efficiency type
Heat source Heat source Heat source Heat source Heat source	2 3 4					
28.0 Water Hea	ting					
Water Heati	ng	Main Heating 1			_	
SAP Code		901	<u> </u>			



	Typical Cost	Typical savings per ye	ar SAP rat	atings after improvement ting Environmental Impact
Recommendations Lower cost measures None Further measures to achieve even higher	standards			
31.0 Thermal Store	None			
In Airing Cupboard	No			
Loss	1.23			kWh/day
Cylinder Volume	150.00			L
Insulation Type	Measured Los	SS		
Independent Time Control	Yes			
Cylinder In Heated Space	Yes			
Cylinder Stat	Yes			
29.0 Hot Water Cylinder	Hot Water Cy	linder		
28.3 Waste Water Heat Recovery System				
	Shower Type	Flow Rate [l/min]	Rated Power Co	onnected Connected To
28.1 Showers	INO			
Immersion Only Heating Hot Water	No			
Bath Count	1			
Cold Water Source	From mains			
Solar Panel Water use <= 125 litres/person/day	No Yes			
Waste Water Heat Recovery Storage System				
·	,			
Waste Water Heat Recovery Instantaneous	•			
Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous	No System 1 No			
Flue Gas Heat Recovery System	No			



Property Reference	0085	517 - HT - Sherwood	I - DET					Issu	ed on Da	ate	16/03	3/2023	
Assessment Reference	As D	esigned			Pro	р Туре	Ref	HT - 8	Sherwood	I - DET			
Property	Plot	, Land Nr Rectory F	arm										
SAP Rating			77 C	DER		5.3	3		TER		11	.28	
Environmental			95 A	% DER	< TFR	0.0	,		1210			2.75	
CO ₂ Emissions (t/year)			0.45	DFEE	11210	38.	21		TFEE			9.01	
Compliance Check			See BREL	% DFE	E < TEE		J I					02	
% DPER < TPER			4.72	DPER	- \ 111	56.	10		TPER			3.88	
// DFER > IFER			4.72	DFLK		36.	10		IFER		50	0.00	
Assessor Details	Mr. Benja	min Wood							Assess	sor ID	P	717-00	01
Client	Persimme	on Homes Severn V	alley , null										
SUMMARY FOR INPU	JT DATA F	OR: New Build ((As Designed)										
Orientation			East										
Property Tenture			ND										
Transaction Type			6					=					
Terrain Type			Suburban										
1.0 Property Type			House, Detached					=					
2.0 Number of Storeys			2										
3.0 Date Built			2022										
4.0 Sheltered Sides			3										
5.0 Sunlight/Shade			Average or unknow	2									
6.0 Thermal Mass Parame	otor		Precise calculation										
	etei .		Frecise Calculation										
7.0 Electricity Tariff			Standard										
Smart electricity meter	fitted		No										
Smart gas meter fitted			No										
7.0 Measurements													
			Ground floo 1st Store	or:	27.90 27.90		er In	44.2	loor Are 0 m² 0 m²	a A	verage	2.33 n 2.57 n	
8.0 Living Area			13.45						m²				
9.0 External Walls													
Description	Туре	Construction		U-Value (W/m²K)		Gross	Nett) Area	Shelter Res	Shelt	er (Opening	s Area	Calculation Type
External Wall	Timber Frame	Timber framed wall (one layer of plasterboard)	0.21	9.00	136.61	(m²) 119.59	0.00	Non	e	17.02	Enter	Gross Area
9.1 Party Walls			one layer or plactorized ay	0.21		100.01	110.00						
Description	Туре	Construc	tion				U-Value	Карр	a Area	s She	elter	Sh	elter
Party Wall	Filled Ca Edge Se		asterboard on both si out sheathing board	des, twin t	timber f	rame	(W/m²K) 0.00	(kJ/m² 20.00			es	N	one
9.2 Internal Walls													
Description		Construct	ion									opa n²K)	Area (m²)
Ground Floor First Floor			rd on timber frame rd on timber frame									00	79.78 120.12
10.0 External Roofs													
Description	Туре	Construction					Gross Area(m²)	Nett Area	Shelter Code			ılation /pe	Opening
Insulated Plane	External Pla	ane Plasterboard,	insulated at ceiling le	•	.09	9.00	44.20	(m²) 0.00	None		Enter	Gross rea	0.00
10.2 Internal Ceilings													
Description Ground Floor		Storey Lowest occupied	Construction Plasterboard ceiling	ng, carpete	ed chip	board fl	oor						.20
11.0 Heat Loss Floors													
Description	Туре	Storey Index	Construction				-Value V/m²K)		Iter Code		Shelter Factor	(kJ/m²l	
Ground Floor	Ground Floor	- Solid Lowest occupied	Suspended concrete flo	or, carpeted			0.12		None		0.00	75.00	44.20



1.2 Internal Floors Description	9	Storey	Construction						Kanna	Area (m
First Floor		ndex	Plasterboard ceiling, carpeted c	hinhoard fl	oor				(kJ/m²K) 9.00	
			i lasterboard celling, carpeted c	inpodard in					9.00	77.20
2.0 Opening Types Description	Data Source T	уре	Glazing		Glazing	Filling	G-value	Frame	Frame	U Value
Solid Doors		Solid Door			Gap	Туре		Type	Factor	(W/m²K) 1.20
Windows	BFRC, BSI or V CERTASS data		Double Low-E Soft 0.				0.46			1.30
Patio Doors	BFRC, BSI or V CERTASS data		Double Low-E Soft 0.				0.46		0.70	1.30
Half-Glazed Doors	Manufacturer V	Vindow	Double Low-E Soft 0.	05			0.63		0.70	1.60
3.0 Openings							_			
Name Front Door	Opening Type Solid Doors)	Location External Wall		Orienta Eas		Area 2.1		Pit	tch
Front Windows	Windows		External Wall		Eas		5.4			
Rear Windows	Windows		External Wall		Wes		3.9			
Rear Patio Doors	Patio Doors		External Wall		Wes		3.8			
LH Windows	Windows		External Wall		Sout		0.8			
RH Windows	Windows		External Wall		Nort	h	0.8	3		
4.0 Conservatory			None							
5.0 Draught Proofing			100				%			
6.0 Draught Lobby			No							
7.0 Thermal Bridging			Calculate Bridges							
7.1 List of Bridges										
Bridge Type			Source Type	Length	Psi	Adjusted	Reference	:		Importe
E2 Other lintels (includi	ing other steel lintels		Independently assessed	12.27	0.08	0.08				No
E3 Sill			Independently assessed	9.44	0.03	0.03				No
E4 Jamb E5 Ground floor (norma	ol)		Independently assessed Independently assessed	30.00 27.90	0.02 0.09	0.02 0.09				No No
E6 Intermediate floor w			Independently assessed	27.90	0.03	0.03				No
E10 Eaves (insulation a			Independently assessed	10.01	0.04	0.04				No
E12 Gable (insulation a			Independently assessed	17.89	0.04	0.04				No
E16 Corner (normal)			Independently assessed	24.48	0.05	0.05				No
E17 Corner (inverted –	internal area greater	r than	Independently assessed	4.90	-0.04	-0.04				No
external area)										
Y-value			0.03				W/m²K			
8.0 Pressure Testing			Yes							
Designed AP ₅₀			4.50				m³/(h.m	n²) @ 50 F	Pa	
Test Method			Blower Door							
9.0 Mechanical Ventilation										
Mechanical Ventilation							_			
	lation System Preser	nt	Yes				\dashv			
Approved Installa Mechanical Ventil			No Database				_			
wedianicai ventii	аноп чана туре		Mechanical extract ventilati	on - decen	tralised		_			
Type			500787	25001						
Type MV Reference Nu	umber						Ħ			
• •	umber		Flexible							
MV Reference Nu	umber									
MV Reference Nu Duct Type		ralised	Flexible							
MV Reference Nu Duct Type Wet Rooms 9.1 Mechanical extract v SFP Fa	ventilation - Decenti in/Room Type Co	ralised ount	Flexible							
MV Reference Nu Duct Type Wet Rooms 9.1 Mechanical extract v SFP Fa 0.13 In Kit	ventilation - Decentr In/Room Type Co Room Fan 0 Ichen		Flexible							
MV Reference Nu Duct Type Wet Rooms 9.1 Mechanical extract v SFP Fa 0.13 In i Kit 0.11 In i	ventilation - Decentr In/Room Type Co Room Fan 0 Ichen Room Fan Other 2		Flexible							
MV Reference Nu Duct Type Wet Rooms 9.1 Mechanical extract v SFP Fa 0.13 In I 0.11 In I We	ventilation - Decentr In/Room Type Co Room Fan 0 Ichen		Flexible							
MV Reference Nu Duct Type Wet Rooms 9.1 Mechanical extract v SFP Fa 0.13 In I Kit 0.11 In I Wee 0.00 In I	ventilation - Decenti In/Room Type Co Room Fan 0 Ichen Room Fan Other 2 et Room		Flexible							
MV Reference Nu Duct Type Wet Rooms 9.1 Mechanical extract v SFP Fa 0.13 In I Kit 0.11 In I We 0.00 In I 0.00 In We	ventilation - Decentr in/Room Type Co Room Fan 0 ichen Room Fan Other 2 et Room Duct Fan Kitchen 0 Duct Fan Other 0 et Room		Flexible							
MV Reference Nu Duct Type Wet Rooms 9.1 Mechanical extract v SFP Fa 0.13 In i Kit 0.11 In i We 0.00 In i 0.00 In i 0.00 Th	ventilation - Decenti In/Room Type Co Room Fan 0 Ichen Room Fan Other 2 et Room Duct Fan Kitchen 0 Duct Fan Other 0		Flexible							



21.0 Fixed Cooling System	No				
22.0 Lighting				_	
No Fixed Lighting	No				
	Name Downlights Spotlights	Efficacy 80.00 90.00	Power 28 9	Capacity 2240 810	Count 8 8
24.0 Main Heating 1	Database				
Percentage of Heat	100.00			%	
Database Ref. No.	104568				
Fuel Type	Electricity				
In Winter	0.00				
In Summer	0.00				
Model Name	Ecodan 5.0 kW				
Manufacturer	Mitsubishi Electr	ic Europe B.V.			
System Type	Heat Pump				
Controls SAP Code	2207				
PCDF Controls	0				
Is MHS Pumped	Pump in heated	space			
Heating Pump Age	2013 or later				
Heat Emitter	Radiators				
Flow Temperature	Enter value			\exists	
Flow Temperature Value	55.00			\exists	
·					
26.0 Heat Networks Heat Source Fuel Type Heating U	None None Efficiency	Percentage Of H Heat	eat Heat E Power Ratio	Electrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4	None		Power	Electrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	None		Power	Electrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating	None See Efficiency		Power	Electrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating	None Se Efficiency Main Heating 1		Power	ilectrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code	None Se Efficiency Main Heating 1 901		Power	Electrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System	None Se Efficiency Main Heating 1 901 No		Power	Electrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1	None Se Efficiency Main Heating 1 901 No No		Power	Electrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2	None Se Efficiency Main Heating 1 901 No No No		Power	Electrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System	Main Heating 1 901 No No No		Power	ilectrical Fuel Facto	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel	Main Heating 1 901 No No No No No		Power	Electrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day	Main Heating 1 901 No No No No No Yes		Power	Electrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source	Main Heating 1 901 No No No No No		Power	Electrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count	Main Heating 1 901 No No No No No Yes From mains 1		Power	Electrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	Main Heating 1 901 No No No No No Yes		Power	Electrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	None Main Heating 1 901 No No No No No From mains 1 Yes	Heat	Power Ratio	Connected Connec	
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type	None Main Heating 1 901 No No No No No From mains 1 Yes	Heat	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type	None Main Heating 1 901 No No No No No From mains 1 Yes	Flow R	Power Ratio		
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	None Main Heating 1 901 No No No No No Yes From mains 1 Yes	Flow R	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Typ 28.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No No Yes From mains 1 Yes Hot Water Cylince	Flow R	Power Ratio		



Insulation Type	Measured Loss	
Cylinder Volume	150.00	L
Loss	1.23	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations Lower cost measures None

Further measures to achieve even higher standards

Tuniani Cant	Tomical acciona nancian	Ratings after improvement			
Typical Cost	Typical savings per year	SAP rating	Environmental Impact		
£4,000 - £6,000	£67	C 80	A 96		
£3,500 - £5,500	£162	B 86	A 97		
		0	0		



Property Reference	008517	- HT - Whinfell -	Semi					Issue	d on Da	ite	23/03/2	2023	
Assessment Reference	As Desi	gned			Pro	р Туре	Ref	HT - W	hinfell -	Semi			
Property	Plot , La	and Nr Rectory F	arm										
SAP Rating			80 C	DER		4.46	3		TER		9.98	3	
Environmental			96 A	% DER	< TER						55.3	31	
CO ₂ Emissions (t/year)			0.47	DFEE		32.6	69		TFEE		33.4	-5	
Compliance Check			See BREL	% DFE	E < TFE	E					2.25	;	
% DPER < TPER			9.97	DPER		46.9	00		TPER		52.0	9	
Assessor Details	Mr. Benjamir	n Wood							Assess	or ID	P71	7-000	1
Client			ersimmon Severn Valle	ξγ									
SUMMARY FOR INP	UT DATA FOR	R: New Build	(As Designed)										
Orientation			East										
Property Tenture			ND										
Transaction Type			6					\equiv					
Terrain Type			Suburban										
1.0 Property Type			House, End-Terrace										
2.0 Number of Storeys			3										
3.0 Date Built			2022										
4.0 Sheltered Sides			2										
5.0 Sunlight/Shade			Average or unknown										
6.0 Thermal Mass Param	eter		Precise calculation										
7.0 Electricity Tariff			Standard										
Smart electricity meter	fitted		No										
Smart gas meter fitted			No										
7.0 Measurements													
			Ground floor 1st Storey 2nd Storey	r: r:	18.05 18.05 18.05 18.05	m m	r Int	ernal Fl 40.08 40.08 31.03	m²	a A	2.	Storey 31 m 55 m 10 m	Heigh
8.0 Living Area			13.85						m²				
9.0 External Walls Description	Туре	Construction		U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)		Shelter Res	Shelte	er	Openings		alculatio
External Wall Wall to Roof Void Dormer Wall	Timber Frame	Timber framed wall (one layer of plasterboard) one layer of plasterboard) one layer of plasterboard)	0.21 0.11 0.44	9.00 9.00 9.00	107.92 14.61 3.51	(m²) 93.22 14.61 2.42	0.00 0.00 0.00	None None None	Э	0.00	Enter G	Gross Are Gross Are Gross Are
9.1 Party Walls Description	Туре	Construc	ction				U-Value				elter	She	lter
Party Wall	Filled Cavity Edge Sealin		ard on dabs mounted s, AAC blocks, cavity	on ceme	nt rende	r on	(W/m²K) 0.00	45.00	(m²) 55.94		les	No	ne
9.2 Internal Walls													
		Construct									Kapp (kJ/m²	K)	rea (m
Description		Diantoulogo	rd on timber frame								9.00 9.00 9.00		76.83 102.15 42.79
Description Ground Floor First Floor Second Floor		Plasterboa	rd on timber frame rd on timber frame										
Ground Floor First Floor Second Floor	Туре	Plasterboa	rd on timber frame		/alue K /m²K)(k		Gross \rea(m²)	Area		Shelte Facto	r Calcula r Typ		penin
Ground Floor First Floor Second Floor 10.0 External Roofs	External Slope	Plasterboa Plasterboa Construction	rd on timber frame	(W	m²K)(k						r Typ Enter G	ross	0.00
Ground Floor First Floor Second Floor 10.0 External Roofs Description	External Slope Roof External Plane	Plasterboa Plasterboa Construction Plasterboard,	rd on timber frame	(W)	m²K)(k. .15	J/m²K)A	krea(m²)	Area (m²)	Code	Facto	r Typ Enter G Area Enter G	ross ross	
Ground Floor First Floor Second Floor 10.0 External Roofs Description Insulated Slope	External Slope Roof	Plasterboard Plasterboard, Plasterboard, Plasterboard,	rd on timber frame	(W / 0 el 0	/ m²K)(k. .15 .11	J/m²K) <i>F</i> 9.00	19.43	Area (m²) 0.00	Code None	0.00	r Typ Enter G Are	ross ross ross a ross	0.00



									*	- 55	
	Roof									Area	
0.2 Internal Ceilings											
Description Ground Floor First Floor	I	Storey Lowest occu +1	ıpied	Construction Plasterboard ceiling, ca Plasterboard ceiling, ca						4	ea (m²) 40.08 31.03
1.0 Heat Loss Floors	T	Ot l d		0		U-Val		05-1601-	01		
Description Ground Floor	Type Cround Floor, Sol	Storey Inde		Construction	antad	(W/m²	K)	Shelter Code	Fa	nelter Kap actor (kJ/r 0.00 75.	
	Ground Floor - Sol	Id Lowest occu	piea	Suspended concrete floor, carp	Delea	0.12	2	None		75.	00 40.08
11.2 Internal Floors Description		Storey	Con	struction						Kappa	Area (m
First Floor		Index	Dlac	terboard ceiling, carpeted	chinhoard f	loor				(kJ/m²K 9.00	
Second Floor				terboard ceiling, carpeted						9.00	31.03
2.0 Opening Types Description	Data Source	Туре		Glazing		Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K
Entrance Door Windows	Manufacturer BFRC, BSI or	Window	or	Double Low-E Soft	0.05	Сар	турс	0.46	Туре	i actor	1.10 1.30
French Door	CERTASS da BFRC, BSI or			Double Low-E Soft	0.05			0.46			1.30
Roof Window	CERTASS da Manufacturer		dow	Double Low-E Soft	0.05			0.63		0.70	1.30
I3.0 Openings											
Name	Opening T			Location		Orienta		Area		P	itch
Front Door Front Windows	Entrance D Windows	oor		External Wall External Wall		Eas Eas		2.1 4.4			
Rear Windows	Windows			External Wall		Wes	st	4.2	26		
Rear Patio Door Front Window	French Doo Windows	or		External Wall Dormer Wall		Wes Eas		3.8 1.0			
Rear Roof Window	Roof Windo	ow .		1st Sheltered Ceiling		Wes		1.0			45
I4.0 Conservatory				None							
5.0 Draught Proofing			Ī	100				%			
16.0 Draught Lobby			Ī	No							
17.0 Thermal Bridging				Calculate Bridges				\neg			
17.1 List of Bridges			ı	Calculate bridges							
Bridge Type			Sou	гсе Туре	Length	Psi	Adjuste	d Reference) :		Importe
E3 Sill	a other steel line	tala)		pendently assessed	6.81 9.64	0.02	0.02				No
E2 Other lintels (includin E4 Jamb	ig other steer iin	ieis)		pendently assessed pendently assessed	23.40	0.08 0.02	0.08 0.02				No No
E5 Ground floor (normal			Inde	pendently assessed	18.05	0.09	0.09				No
E6 Intermediate floor wit E11 Eaves (insulation at				pendently assessed pendently assessed	36.10 10.16	0.03 0.02	0.03 0.02	APA			No No
E13 Gable (insulation at	a:			pendently assessed	11.16	-0.00	-0.00				No
E16 Corner (normal)				pendently assessed	10.23	0.05	0.05				No
E17 Corner (inverted – in external area)	nternal area gre	ater than	inae	pendently assessed	3.39	-0.04	-0.04				No
R1 Head of roof window				pendently assessed	2.01	0.06	0.06				No
R2 Sill of roof window R3 Jamb of roof window	,			pendently assessed pendently assessed	2.01 6.31	0.06 0.06	0.06 0.06				No No
R4 Ridge (vaulted ceiling	g)			e K1 - Default	5.08	0.00	0.00				No
E18 Party wall between				pendently assessed	10.23	-0.00	-0.00				No
P1 Party wall - Ground fl P2 Party wall - Intermedi		a dwelling		pendently assessed Approved Scheme	7.89 15.78	0.03 0.00	0.03				No No
P5 Party wall - Roof (ins	ulation at rafter		Inde	pendently assessed	11.16	0.01	0.01				No
R7 Flat ceiling (inverted) R9 Roof to wall (flat ceili				pendently assessed pendently assessed	6.83 4.41	-0.02 0.02	-0.02 0.02				No No
E16 Corner (normal)	rig)			e K1 - Default	3.78	0.18	0.02				No
Y-value				0.03				W/m²K			
18.0 Pressure Testing				Yes				\neg			
Designed AP ₅₀				4.50				m³/(h.n	n²) @ 50 F	Pa	
Test Method				Blower Door					. •		
19.0 Mechanical Ventilation	n							_			
Mechanical Ventilation											
Mechanical Ventila	ation System Pre	esent		Yes							
Approved Installati	on		Ī	Yes							
Mechanical Ventila			ĺ	Database							



MV Reference Number	500787]	
Duct Type	Flexible				
Wet Rooms	4				
9.1 Mechanical extract ventilation - Decentralised					
SFP Fan/Room Type Count 0.13 In Room Fan 0 Kitchen 0.11 In Room Fan Other 1 Wet Room 0.00 In Duct Fan Kitchen 0 0.00 In Duct Fan Other 0 Wet Room 0.10 Through Wall Fan 1 Kitchen Through Wall Fan 2 2 Other Wet Room Other Wet Room					
20.0 Fans, Open Fireplaces, Flues	F			1	
21.0 Fixed Cooling System	No				
22.0 Lighting No Fixed Lighting	No Name Downlights Spotlights	Efficacy 80.00 90.00	Power 28 9	Capacity 2240 810	Count 9 8
4.0 Main Heating 1	Database]	
Percentage of Heat	100.00			%	
Database Ref. No.	104568				
Fuel Type	Electricity]	
In Winter	0.00]	
In Summer	0.00]	
Model Name	Ecodan 5.0 kW]	
Manufacturer	Mitsubishi Electri	c Europe B.V.]	
System Type	Heat Pump]	
Controls SAP Code	2207]	
Is MHS Pumped	Pump in heated s	space]	
Heating Pump Age	2013 or later]	
Heat Emitter	Radiators]	
Flow Temperature	Enter value]	
Flow Temperature Value	55.00]	
25.0 Main Heating 2	None]	
26.0 Heat Networks	None]	
8.0 Water Heating				_	
Water Heating	Main Heating 1				
SAP Code	901				
Flue Gas Heat Recovery System	No			_	
Waste Water Heat Recovery Instantaneous System	n 1 No			_	
Waste Water Heat Recovery Instantaneous System	n 2 No			_	
Waste Water Heat Recovery Storage System	No			_	
Solar Panel	No			_	
Water use <= 125 litres/person/day	Yes				
Cold Water Source	From mains				
Bath Count	1]	
Immersion Only Heating Hot Water	No				

28.1 Showers



Description			Showe	r Туре			Rate	Rated Power [kW]	Connected	Connected To	
28.3 Waste Wat	er Heat Recov	very System									
29.0 Hot Water	Cylinder			Hot Water Cy	linder						
Cylinder Sta	t			Yes							
Cylinder In F	leated Space			Yes							
Independent	Time Control			Yes							
Insulation Ty	ре			Measured Lo	ss						
Cylinder Vol	ume			150.00					L		
Loss				1.23					kWh/day		
Pipes insula	tion			Fully insulate	d primary	/ pipework					
In Airing Cup	board			No							
31.0 Thermal St	tore			None							
34.0 Small-scal	e Hydro			None							
Jan	Feb	Mar	Apr	May	Jun	Jul	Au	g Sep	Oct	Nov	Dec
Recommendati Lower cost None Further mea		eve even hiç	jher stand	ards							
				Typical Cost £4,000 - £6,000 £3,500 - £5,500	Тур	pical savings £68 £169	per ye	SAP E	Ratings after rating 3 82 3 87 0	er improvement Environmer A 9 A 9	ntal Impact 96 97

Page 4 of 4 SAP 10 Online 2.5.5



Property Reference	00	08517	- HT - Whiteleaf	- DET					Issu	ed on D	ate	16/03	3/2023	
Assessment Reference	A	s Desi	gned - As			Pre	ор Туре	Ref	HT - \	Vhiteleaf	- DET			
Property	Р	lot , La	nd Nr Rectory Fa	arm										
SAP Rating				79 C	DER		4.4	1		TER		a	89	
Environmental				96 A	% DER	< TFR		· ·		1210			5.11	
CO ₂ Emissions (t/year)				0.49	DFEE		38	10		TFEE			3.92	
Compliance Check				See BREL	% DFE	F < TF		. 10					10	
% DPER < TPER				9.50	DPER	_ \	46	65		TPER			1.55	
% DFER \ IFER				9.50	DFLK		40	.00		IFLK		3	1.55	
Assessor Details	Mr. Be	njamin	Wood							Asses	sor ID	P	717-00	01
Client	Persin	nmon F	Homes Severn Va	alley , null										
SUMMARY FOR INPL	JT DATA	FOR	: New Build (As Designed)										
Orientation				East										
Property Tenture				ND										
Transaction Type				6										
Terrain Type				Suburban										
1.0 Property Type				House, Detached										
2.0 Number of Storeys				2										
3.0 Date Built				2023										
4.0 Sheltered Sides				2										
5.0 Sunlight/Shade				Average or unknow	I									
6.0 Thermal Mass Parame	eter			Precise calculation										
7.0 Electricity Tariff				Standard										
Smart electricity meter	fitted			No										
Smart gas meter fitted				No										
7.0 Measurements														
				Ground floo 1st Store	r:	30.37 30.37		er In	57.5	loor Are 8 m² 8 m²	a A	verage	2.33 n 2.57 n	
8.0 Living Area				13.30						m²				
9.0 External Walls														
Description	Туре	C	Construction		U-Value				Shelter	Shelt	ter (Opening	s Area	Calculation
External Wall	Timber Fran	ne T	Timber framed wall (c	one layer of plasterboard)	(vv/m-k) 0.21	9.00	() Area(m 148.71	(m²)	Res 0.00	Non	۵	24.46	Enter	Type Gross Area
9.1 Party Walls	Timber Fran		iniber named wan (e	one layer or plasterboard)	0.21	3.00	140.71	124.20	0.00	14011		24.40	Litter	01033 7108
Description	Туре		Construc	tion				U-Value	. Карр	a Area	a She	elter	Sh	elter
Party Wall		Cavity Sealin		asterboard on both s ut sheathing board	des, twin	timber	f rame	(W/m²K 0.00	20.00 (kJ/m²			es	N	one
9.2 Internal Walls														
Description			Constructi	on									opa n²K)	Area (m²)
Ground Floor First Floor				rd on timber frame rd on timber frame								` 9.	00 00	112.31 164.84
10.0 External Roofs														
Description	Type		Construction					Gross Area(m²)	Nett Area	Shelter Code			ılation /pe	Opening
Insulated Plane	External Roof	Plane	Plasterboard, i	nsulated at ceiling le	-).09	9.00	57.58	(m²) 0.00	None		Enter	Gross rea	0.00
10.2 Internal Ceilings														
Description Ground Floor			Storey _owest occupied	Construction Plasterboard ceili	ng, carpet	ed chip	board f	oor						1 (m²) 1.58
11.0 Heat Loss Floors														
Description	Туре	_	Storey Index	Construction				J-Value W/m²K)		Iter Code		Shelter Factor	(kJ/m²	
Ground Floor	Ground Flo	oor - Soli	d Lowest occupied	Suspended concrete flo	or, carpeted	1		0.12		None		0.00	75.00	57.58



12.0 Opening Types Description Data Source Type Glazing Glazing Glazing Gap Type Frame Type Type Frame Type Frame Type Type Frame Type Frame Type Ty	11.2 Internal Floors											
Description	Description			Cons	struction							
Description	First Floor			Plast	erboard ceiling, carpeted	d chipboard fl	oor				9.00	57.58
Solid Doors		Data Source	Туре		Glazing				G-value			U Value (W/m²K)
Pais Decore BFRC, SIS or Window Double Low-E Soft 0.05 0.46 1.00		BFRC, BSI or	Window	r	Double Low-E Sof	t 0.05	Gap	туре	0.46	туре	racioi	1.10 1.30
Half-Clized Doors	Patio Doors	BFRC, BSI or	Window		Double Low-E Sof	t 0.05			0.46			1.30
Name	Half-Glazed Doors				Double Low-E Sof	t 0.05			0.63		0.70	1.10
Front Door	13.0 Openings											
15.0 Draught Proofing	Name Front Door Front Windows Rear Windows Rear Patio Doors Rear Door LH Windows	Solid Doors Windows Windows Patio Doors Half-Glazed Windows			External Wall External Wall External Wall External Wall External Wall External Wall		Ea Ea We We Sou	st st st st st uth	2.1 7.5 4.5 3.8 2.1 0.6	5 7 22 60 5 60	Pi	tch
15.0 Draught Proofing	14.0 Conservatory			Г	None							
15.0 Draught Lobby	-								- %			
17.1 List of Bridges Bridge Type	0											
17.1 List of Bridges Bridge Type	47.0 The sum of Duidering				Calaudata Bridges				-			
Source Type E.2 Other lintels (including other steel lintels) Independently assessed 17.03 0.08 0.08 0.08 E.3 Sill Si				Ľ	Calculate Bridges							
18.0 Pressure Testing Designed AP∞ Test Method Designed Ventilation Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation System Present Approved Installation Mechanical Ventilation data Type Database Type Mechanical extract ventilation - decentralised MV Reference Number Duct Type Wet Rooms 19.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type O.13 In Room Fan Other 2 Wet Room Nicthen O.11 In Room Fan Other 0 Wet Room O.00 In Duct Fan Kitchen 0 O.00 In Duct Fan Kitchen 0 O.00 In Duct Fan Type United Room Nicthen O.10 Through Wall Fan 1 Kitchen O.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	E3 Sill E4 Jamb E5 Ground floor (normal E6 Intermediate floor wit E10 Eaves (insulation at E12 Gable (insulation at) thin a dwelling ceiling level)	iis)	Inder Inder Inder Inder Inder	pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed pendently assessed	13.18 43.80 30.37 30.37 15.75 14.62	0.03 0.02 0.09 0.03 0.04 0.04	0.03 0.02 0.09 0.03 0.04 0.04				No No No No No No No
Designed AP₃₀ Test Method Biower Door 19.0 Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation Approved Installation Mechanical Ventilation data Type Database Type Mechanical extract ventilation - decentralised MV Reference Number Duct Type Wet Rooms 5 19.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type Count No No 10.11 In Room Fan 0 Kitchen 0.00 In Duct Fan Kitchen 0 0.00 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	Y-value				0.03				W/m²K			
Test Method Blower Door 19.0 Mechanical Ventilation Mechanical Ventilation Mechanical Ventilation System Present Mechanical Ventilation System Present Approved Installation Mechanical Ventilation data Type Database Type Mechanical extract ventilation - decentralised MY Reference Number Duct Type Wet Rooms 500787 Flexible Wet Rooms 5019.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type Count NItchen 0.11 In Room Fan Other 2 Wet Room 0.00 In Duct Fan Kitchen 0 0.00 In Duct Fan Kitchen 0 0.00 In Duct Fan Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	18.0 Pressure Testing			[Yes							
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Mechanical Ventilation Mechanical Ventilation System Present Approved Installation Mechanical Ventilation data Type Database Type Mechanical extract ventilation - decentralised MV Reference Number Duct Type Wet Rooms 5 19.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type Count Nitchen 1 In Room Fan Other 2 Wet Room 0.00 In Duct Fan Kitchen 0 0.10 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	Test Method				Blower Door							
Mechanical Ventilation System Present Approved Installation Mechanical Ventilation data Type Database Type Mechanical extract ventilation - decentralised MV Reference Number Duct Type Wet Rooms 19.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type Count In Room Fan Oher 2 Wet Room 0.00 In Duct Fan Other 2 Wet Room 0.00 In Duct Fan Other 0 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	19.0 Mechanical Ventilatio	n										
Approved Installation Mechanical Ventilation data Type Type Mechanical extract ventilation - decentralised MV Reference Number Duct Type Wet Rooms 5 19.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type Count In Room Fan Nitchen 1.11 In Room Fan Other 2 Wet Room 0.00 In Duct Fan Kitchen 0 1.000 In Duct Fan Other 0 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	Mechanical Ventilation	l							_			
Mechanical Ventilation data Type Type Mechanical extract ventilation - decentralised MV Reference Number Duct Type Wet Rooms 5 19.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type 0.13 In Room Fan Kitchen 0.11 In Room Fan Other 2 Wet Room 0.00 In Duct Fan Kitchen 0 0.00 In Duct Fan Other 0 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	Mechanical Ventila	tion System Pres	ent	Ĺ	Yes							
Type Mechanical extract ventilation - decentralised MV Reference Number 500787 Duct Type Flexible Wet Rooms 5 19.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type Count	Approved Installati	on			No							
MV Reference Number Duct Type Wet Rooms 19.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type Count In Room Fan 0 Kitchen 0.11 In Room Fan Other 2 Wet Room 0.00 In Duct Fan Kitchen 0 0.00 In Duct Fan Other 0 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	Mechanical Ventila	ition data Type			Database							
Duct Type Flexible	Туре				Mechanical extract venti	lation - decen	tralised					
Wet Rooms 19.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type Count 0.13 In Room Fan 0 Kitchen 0.11 In Room Fan Other 2 Wet Room 0.00 In Duct Fan Kitchen 0 0.00 In Duct Fan Other 0 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	MV Reference Nur	mber			500787							
19.1 Mechanical extract ventilation - Decentralised SFP Fan/Room Type Count 0.13 In Room Fan 0 Kitchen 0.11 In Room Fan Other 2 Wet Room 0.00 In Duct Fan Kitchen 0 0.00 In Duct Fan Other 0 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	Duct Type				Flexible							
SFP Fan/Room Type Count 0.13 In Room Fan 0 Kitchen 0.11 In Room Fan Other 2 Wet Room 0.00 In Duct Fan Kitchen 0 0.00 In Duct Fan Other 0 0 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 0 20.0 Fans, Open Fireplaces, Flues	Wet Rooms				5							
SFP Fan/Room Type Count 0.13 In Room Fan 0 Kitchen 0.11 In Room Fan Other 2 Wet Room 0.00 In Duct Fan Kitchen 0 0.00 In Duct Fan Other 0 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room Other Wet Room	19.1 Mechanical extract ve	entilation - Decei	ntralised									
0.00 In Duct Fan Other 0 Wet Room 0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	0.13 In R Kito 0.11 In R	Room Fan (hen Room Fan Other 2)									
0.10 Through Wall Fan 1 Kitchen 0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	0.00 In D 0.00 In D	ouct Fan Kitchen (Ouct Fan Other (
0.10 Through Wall Fan 2 Other Wet Room 20.0 Fans, Open Fireplaces, Flues	0.10 Thre	ough Wall Fan	1									
	0.10 Thre	ough Wall Fan 2	2									
21.0 Fixed Cooling System No	20.0 Fans, Open Fireplace	s, Flues										
	21.0 Fixed Cooling System	ı			No							



22.0 Lighting					
No Fixed Lighting	No	F#:	Power	 Capacity	Count
	Name Downlights Spotlights	80.00 90.00	28 9	2240 810	Count 10 8
24.0 Main Heating 1	Database				
Percentage of Heat	100.00			%	
Database Ref. No.	104640				
Fuel Type	Electricity				
In Winter	0.00				
In Summer	0.00				
Model Name	Ecodan 8.5 kW				
Manufacturer	Mitsubishi Electric Eu	rope B.V.			
System Type	Heat Pump				
Controls SAP Code	2207				
PCDF Controls	0				
Is MHS Pumped	Pump in heated space	e			
Heating Pump Age	2013 or later				
Heat Emitter	Radiators				
Flow Temperature	Enter value				
Flow Temperature Value	55.00				
	None				
25.0 Main Heating 2					
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2	None se Efficiency Perc	centage Of He Heat	at Heat E Power Ratio	Electrical Fuel Facto	or Efficiency typ
26.0 Heat Networks Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5			Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating	se Efficiency Perc		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating	se Efficiency Perc		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code	Se Efficiency Perco		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System	Se Efficiency Perco		Power	Electrical Fuel Facto	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1	Main Heating 1 901 No		Power	Electrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2	Main Heating 1 901 No No		Power	Electrical Fuel Factor	or Efficiency ty
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System	Main Heating 1 901 No No No		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel	Main Heating 1 901 No No No No		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day	Main Heating 1 901 No No No No No Yes		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source	Main Heating 1 901 No No No No		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count	Main Heating 1 901 No No No No No Yes From mains 1		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	Main Heating 1 901 No No No No No Yes		Power	Electrical Fuel Factor	or Efficiency typ
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water	Main Heating 1 901 No No No No No Yes From mains 1 Yes	Heat	Power Ratio	Connected Connec	
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type	Main Heating 1 901 No No No No No Yes From mains 1 Yes	Heat	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type 28.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No No Yes From mains 1 Yes	Heat	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Type 28.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No No Yes From mains 1 Yes	Heat	Power Ratio		
Heat Source Fuel Type Heating U Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Typ 28.3 Waste Water Heat Recovery System	Main Heating 1 901 No No No No Yes From mains 1 Yes Hot Water Cylinder	Heat	Power Ratio		
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5 28.0 Water Heating Water Heating SAP Code Flue Gas Heat Recovery System Waste Water Heat Recovery Instantaneous System 1 Waste Water Heat Recovery Instantaneous System 2 Waste Water Heat Recovery Storage System Solar Panel Water use <= 125 litres/person/day Cold Water Source Bath Count Immersion Only Heating Hot Water 28.1 Showers Description Shower Typ 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat	Main Heating 1 901 No No No No Yes From mains 1 Yes Hot Water Cylinder Yes	Heat	Power Ratio		



Cylinder Volume					150.00] L		
Loss					1.23					kWh/day		
In Airing Cupboard					No							
31.0 Thermal Store												
34.0 Small-scale Hydro				None								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Recommendations

Lower cost measures None

Further measures to achieve even higher standards

Ratings after improvement SAP rating Environmental Impact Typical Cost Typical savings per year £4,000 - £6,000 £3,500 - £5,500 £67 £170 B 81 B 87