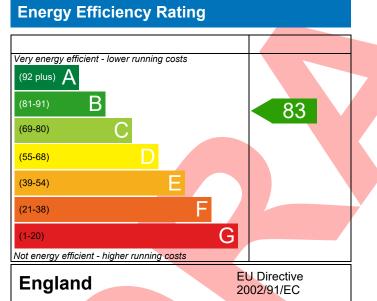
#### PREDICTED ENERGY ASSESSMENT



K, 2B, 1Ba, ES, OX Dwelling type: Date of assessment: Produced by: Total floor area: Flat, End-Terrace 15/10/2020 Ross Elliott 72.85 m<sup>2</sup>

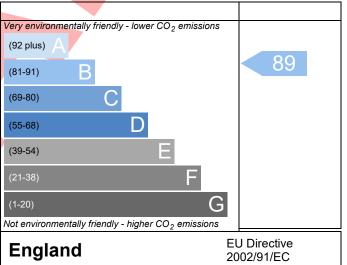
This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide  $(CO_2)$  emissions.



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

#### Environmental Impact (CO<sub>2</sub>) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide  $(CO_2)$  emissions. The higher the rating the less impact it has on the environment.

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.



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# **BUILDING REGULATION COMPLIANCE** Calculation Type: New Build (As Designed)



SAP Rating         Environmental         CO2 Emissions (t/year)         General Requirements Compliant         Assessor Details       Mr. Andrew andrew.mcd         Assessor Details       Mr. Andrew andrew.mcd         Client       Hill Western         UMARY FOR INPUT DATA FOR I         riterion 1 – Achieving the TER at         a TER and DER         Fuel for main heating         Fuel factor         Target Carbon Dioxide Emission         Dwelling Carbon Dioxide Emission         b TFEE and DFEE         Target Fabric Energy Efficience         Dwelling Fabric Standards         2 Fabric U-values         Element         External wall	89 B         0.92         nce       Pass         McManus, Andrew McManus, Tomanus@aessc.co.uk         Image: second s	Is gas) kgCO <sub>2</sub> /r kgCO <sub>2</sub> /r 5%) kgCO <sub>2</sub> /r kwh/m <sup>2</sup> kWh/m <sup>2</sup>	m <sup>2</sup> Pass n <sup>2</sup> Pass n <sup>2</sup> 2/yr
SAP Rating         Environmental         CO2 Emissions (t/year)         General Requirements Compliant         Assessor Details       Mr. Andrew andrew.mcd         Assessor Details       Mr. Andrew andrew.mcd         Client       Hill Western         UMARY FOR INPUT DATA FOR Information 1 – Achieving the TER at a TER and DER         Fuel for main heating         Fuel for main heating         Fuel factor         Target Carbon Dioxide Emission         Dwelling Carbon Dioxide Emission         Dwelling Fabric Energy Efficience         Dwelling Fabric Energy Efficience         Triterion 2 – Limits on design flee         Limiting Fabric Standards         2 Fabric U-values         Element         External wall	83 B         89 B         0.92         nce         Pass         McManus, Andrew McManus, Tomanus@aessc.co.uk         Iew Build (As Designed)         nd TFEE rate         Mains gas         1.00 (main         9.51         sion Rate (DER)         15.12         -4.39 (-22.         y (TFEE)         52.61         -3.7 (-6.6%)	% DER <ter< td="">         22.52           DFEE         52.61         TFEE           % DFEE         6.49           el: 01455 883250,         Assessor ID           ns gas)         kgCO2/r           5%)         kgCO2/r           5%)         kWh/mi</ter<>	2/yr
Environmental CO <sub>2</sub> Emissions (t/year) General Requirements Complian Assessor Details Mr. Andrew andrew.mci Client Hill Westerr UMARY FOR INPUT DATA FOR I riterion 1 – Achieving the TER a a TER and DER Fuel for main heating Fuel for main heating Fuel factor Target Carbon Dioxide Emission Dwelling Carbon Dioxide Emission Dwelling Carbon Dioxide Emission b TFEE and DFEE Target Fabric Energy Efficience Dwelling Fabric Energy Efficience Inviterion 2 – Limits on design flee Limiting Fabric Standards 2 Fabric U-values Element External wall	89 B         0.92         nce       Pass         McManus, Andrew McManus, Tomanus@aessc.co.uk         Image: second s	% DER <ter< td="">         22.52           DFEE         52.61         TFEE           % DFEE         6.49           el: 01455 883250,         Assessor ID           ns gas)         kgCO2/r           5%)         kgCO2/r           5%)         kWh/mi</ter<>	2/yr
CO₂ Emissions (t/year) General Requirements Complian Assessor Details Mr. Andrew. andrew.mcd Client UMARY FOR INPUT DATA FOR I riterion 1 – Achieving the TER a a TER and DER Fuel for main heating Fuel for main heating Fuel factor Target Carbon Dioxide Emission Dwelling Carbon Dioxide Emission b TFEE and DFEE Target Fabric Energy Efficience Dwelling Fabric Energy Efficience riterion 2 – Limits on design flee Limiting Fabric Standards 2 Fabric U-values Element External wall	0.92 nce Pass McManus, Andrew McManus, Tonanus@aessc.co.uk New Build (As Designed) New Build (As Designed) New Build (As Designed) Mains gas 1.00 (main 1.00 (main 1.	DFEE         52.61         TFEE           % DFEE         6.49           el: 01455 883250,         Assessor ID           is gas)         kgCO2/r           \$%)         kgCO2/r           \$%)         kgCO2/r           \$%)         kgCO2/r           \$%)         kgCO2/r           \$%)         kgCO2/r	P639-0001 P639-0001 n <sup>2</sup> n <sup>2</sup> Pass n <sup>2</sup> <sup>2</sup> /yr
General Requirements Complian         Assessor Details       Mr. Andrew andrew.mcd         Assessor Details       Mr. Andrew andrew.mcd         Client       Hill Western         UMARY FOR INPUT DATA FOR I       Fill Western         UMARY FOR INPUT DATA FOR I       Fill Western         Interion 1 – Achieving the TER at a TER and DER       Fuel for main heating         Fuel for main heating       Fuel factor         Target Carbon Dioxide Emission       Dwelling Carbon Dioxide Emission         Dwelling Carbon Dioxide Emission       Dwelling Fabric Energy Efficience         Dwelling Fabric Energy Efficience       Dwelling Fabric Energy Efficience         Initing Fabric Standards       2 Fabric U-values         Element       External wall	Acce Pass McManus, Andrew McManus, To nanus@aessc.co.uk New Build (As Designed) Idew Build (As Designed) Ind TFEE rate Mains gas 1.00 (main 19.51 100 (main 19.51 15.12 -4.39 (-22. (TFEE) 15.26 52.61 -3.7 (-6.6%	% DFEE         6.49           el: 01455 883250,         Assessor ID           is gas)         kgCO2/r           kgCO2/r         kgCO2/r           5%)         kgCO2/r           kWh/mi         kWh/mi	P639-0001 P639-0001 n <sup>2</sup> n <sup>2</sup> Pass n <sup>2</sup> <sup>2</sup> /yr
Assessor Details Mr. Andrew. andrew.mci Assessor Details Mr. Andrew. andrew.mci Hill Western UMARY FOR INPUT DATA FOR INF riterion 1 – Achieving the TER and a TER and DER Fuel for main heating Fuel for main heating Fuel for main heating Fuel for main heating Fuel factor Target Carbon Dioxide Emission Dwelling Carbon Dioxide Emission b TFEE and DFEE Target Fabric Energy Efficience Dwelling Fabric Energy Efficience riterion 2 – Limits on design flee Limiting Fabric Standards 2 Fabric U-values Element External wall	McManus, Andrew McManus, To nanus@aessc.co.uk Jew Build (As Designed) nd TFEE rate Mains gas 1.00 (main 90 Rate (TER) 19.51 sion Rate (DER) 15.12 -4.39 (-22. 4 (TFEE) 52.61 -3.7 (-6.6%	el: 01455 883250, Assessor ID as gas) kgCO <sub>2</sub> /r kgCO <sub>2</sub> /r 5%) kgCO <sub>2</sub> /r kgCO <sub>2</sub> /r kgCO <sub>2</sub> /r kgCO <sub>2</sub> /r	m <sup>2</sup> Pass n <sup>2</sup> Pass n <sup>2</sup> 2/yr
andrew.mci         Andrew.mci         Hill Western         UMARY FOR INPUT DATA FOR I         riterion 1 – Achieving the TER a         a TER and DER         Fuel for main heating         Fuel for main heating         Fuel factor         Target Carbon Dioxide Emission         Dwelling Carbon Dioxide Emission         b TFEE and DFEE         Target Fabric Energy Efficience         Dwelling Fabric Energy Efficience         riterion 2 – Limits on design flee         Limiting Fabric Standards         2 Fabric U-values         Element         External wall	nanus@aessc.co.uk Iew Build (As Designed) Ind TFEE rate Mains gas 1.00 (main 19.51 sion Rate (DER) -4.39 (-22. (TFEE) 15.12 -4.39 (-22. (TFEE) 15.12 -4.39 (-26) -3.7 (-6.6%	Is gas) kgCO <sub>2</sub> /r kgCO <sub>2</sub> /r 5%) kgCO <sub>2</sub> /r kwh/m <sup>2</sup> kWh/m <sup>2</sup>	m <sup>2</sup> Pass n <sup>2</sup> Pass n <sup>2</sup> 2/yr
UMARY FOR INPUT DATA FOR F riterion 1 – Achieving the TER a a TER and DER Fuel for main heating Fuel factor Target Carbon Dioxide Emissio Dwelling Carbon Dioxide Emissio Dwelling Carbon Dioxide Emissio b TFEE and DFEE Target Fabric Energy Efficienc Dwelling Fabric Energy Efficienc Inwelling Fabric Energy Efficienc Element Element External wall	Iew Build (As Designed)           and TFEE rate           Mains gas           1.00 (main           on Rate (TER)           19.51           sion Rate (DER)           -4.39 (-22.           r (TFEE)           56.26           ncy (DFEE)           -3.7 (-6.6%	is gas)       kgCO2/r         kgCO2/r       kgCO2/r         5%)       kgCO2/r         kwh/m <sup>2</sup> kWh/m <sup>2</sup>	m <sup>2</sup> Pass m <sup>2</sup> <sup>2</sup> /yr <sup>2</sup> /yr
riterion 1 – Achieving the TER a a TER and DER Fuel for main heating Fuel factor Target Carbon Dioxide Emissio Dwelling Carbon Dioxide Emission b TFEE and DFEE Target Fabric Energy Efficience Dwelling Fabric Energy Efficience riterion 2 – Limits on design fle Limiting Fabric Standards 2 Fabric U-values Element External wall	Mains gas         1.00 (main         90 Rate (TER)         19.51         sion Rate (DER)         15.12         -4.39 (-22.         v (TFEE)         56.26         ncy (DFEE)         -3.7 (-6.6%)	is gas)       kgCO2/r         kgCO2/r       kgCO2/r         5%)       kgCO2/r         kwh/m <sup>2</sup> kWh/m <sup>2</sup>	m <sup>2</sup> Pass m <sup>2</sup> <sup>2</sup> /yr <sup>2</sup> /yr
A TER and DER Fuel for main heating Fuel factor Target Carbon Dioxide Emission Dwelling Carbon Dioxide Emission Dwelling Carbon Dioxide Emission DTFEE and DFEE Target Fabric Energy Efficience Dwelling Fabric Energy Efficience Titerion 2 – Limits on design flee Limiting Fabric Standards 2 Fabric U-values Element External wall	Mains gas         1.00 (main         19.51         sion Rate (DER)         15.12         -4.39 (-22.         (TFEE)         56.26         ncy (DFEE)         -3.7 (-6.6%)	is gas)       kgCO2/r         kgCO2/r       kgCO2/r         5%)       kgCO2/r         kwh/m <sup>2</sup> kWh/m <sup>2</sup>	m <sup>2</sup> Pass m <sup>2</sup> <sup>2</sup> /yr <sup>2</sup> /yr
Fuel for main heating Fuel factor Target Carbon Dioxide Emissio Dwelling Carbon Dioxide Emissio <b>5 TFEE and DFEE</b> Target Fabric Energy Efficience Dwelling Fabric Energy Efficient riterion 2 – Limits on design fle Limiting Fabric Standards <u>2 Fabric U-values</u> Element External wall	1.00 (main         1.00 (main         1.00 (main         19.51         sion Rate (DER)         15.12         -4.39 (-22.         (TFEE)         56.26         ncy (DFEE)         -3.7 (-6.6%)	is gas)       kgCO2/r         kgCO2/r       kgCO2/r         5%)       kgCO2/r         kwh/m <sup>2</sup> kWh/m <sup>2</sup>	m <sup>2</sup> Pass m <sup>2</sup> <sup>2</sup> /yr <sup>2</sup> /yr
Fuel factor Target Carbon Dioxide Emissio Dwelling Carbon Dioxide Emissio <b>b TFEE and DFEE</b> Target Fabric Energy Efficience Dwelling Fabric Energy Efficience riterion 2 – Limits on design flee Limiting Fabric Standards <u>2 Fabric U-values</u> Element External wall	1.00 (main         1.00 (main         1.00 (main         19.51         sion Rate (DER)         15.12         -4.39 (-22.         (TFEE)         56.26         ncy (DFEE)         -3.7 (-6.6%)	is gas)       kgCO2/r         kgCO2/r       kgCO2/r         5%)       kgCO2/r         kwh/m <sup>2</sup> kWh/m <sup>2</sup>	m <sup>2</sup> Pass m <sup>2</sup> <sup>2</sup> /yr <sup>2</sup> /yr
Target Carbon Dioxide Emissio Dwelling Carbon Dioxide Emissio <b>b TFEE and DFEE</b> Target Fabric Energy Efficience Dwelling Fabric Energy Efficient riterion 2 – Limits on design fle Limiting Fabric Standards <u>2 Fabric U-values</u> Element External wall	on Rate (TER) sion Rate (DER) -4.39 (-22. (TFEE) (TFEE) (TFEE) 52.61 -3.7 (-6.6%	kgCO <sub>2</sub> /r kgCO <sub>2</sub> /r 5%) kgCO <sub>2</sub> /r kWh/m <sup>2</sup> kWh/m <sup>2</sup>	m <sup>2</sup> Pass m <sup>2</sup> <sup>2</sup> /yr <sup>2</sup> /yr
Dwelling Carbon Dioxide Emis <b>b TFEE and DFEE</b> Target Fabric Energy Efficience Dwelling Fabric Energy Efficience riterion 2 – Limits on design flee Limiting Fabric Standards <u>2 Fabric U-values</u> Element External wall	sion Rate (DER) 15.12 -4.39 (-22. ( (TFEE) 56.26 hcy (DFEE) 52.61 -3.7 (-6.6%	kgCO <sub>2</sub> /r 5%) kgCO <sub>2</sub> /r kWh/m <sup>2</sup> kWh/m <sup>2</sup>	m <sup>2</sup> Pass m <sup>2</sup> <sup>2</sup> /yr <sup>2</sup> /yr
D TFEE and DFEE Target Fabric Energy Efficience Dwelling Fabric Energy Efficience riterion 2 – Limits on design fle Limiting Fabric Standards 2 Fabric U-values Element External wall	-4.39 (-22. (TFEE) hcy (DFEE) -3.7 (-6.6%	5%) kgCO <sub>2</sub> /r kWh/m <sup>2</sup> kWh/m <sup>2</sup>	m² ²/yr ²/yr
Target Fabric Energy Efficience Dwelling Fabric Energy Efficience riterion 2 – Limits on design fle Limiting Fabric Standards <u>2 Fabric U-values</u> Element External wall	y (TFEE) 56.26 hcy (DFEE) 52.61 -3.7 (-6.6%	kWh/m <sup>2</sup> kWh/m <sup>2</sup>	²/yr ²/yr
Target Fabric Energy Efficience Dwelling Fabric Energy Efficience riterion 2 – Limits on design fle Limiting Fabric Standards 2 Fabric U-values Element External wall	ncy (DFEE) 52.61 -3.7 (-6.6%	kWh/m	²/yr
Dwelling Fabric Energy Efficient riterion 2 – Limits on design flex Limiting Fabric Standards 2 Fabric U-values Element External wall	ncy (DFEE) 52.61 -3.7 (-6.6%	kWh/m	²/yr
riterion 2 – Limits on design fle Limiting Fabric Standards <u>2 Fabric U-values</u> Element External wall	-3.7 (-6.6%		
Limiting Fabric Standards <u>2 Fabric U-values</u> Element External wall		هُ) kWh/m <sup>2</sup>	
Limiting Fabric Standards <u>2 Fabric U-values</u> Element External wall			²/yr Pass
<u>2 Fabric U-values</u> Element External wall	kibility		
<b>Element</b> External wall			
External wall			
	Average	Highest	
	0.20 (max. 0.30)	0.20 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.11 (max. 0.25)	0.11 (max. 0.70)	Pass
Openings	1.22 (max. 2.00)	1.36 (max. 3.30)	Pass
2a Thermal bridging			
	d from linear thermal transmitta	nces for each junction	
<u>3 Air permeability</u>			
Air permeability at 50 pase	als 4.00 (desig	gn value) m³/(h.m²) @ 5	50 Pa
Maximum	10.0	m³/(h.m²) @ 5	50 Pa Pass
Limiting System Efficiencies			
4 Heating efficiency			

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## **BUILDING REGULATION COMPLIANCE** Calculation Type: New Build (As Designed)



Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Vaillant ecoFIT sustain 835 VUW 356/6-3 (H-GB) Combi boiler Efficiency: 89.3% SEDBUK2009	Pass
	Minimum: 88.0%	
Secondary heating system	None	
5 Cylinder insulation		
Hot water storage	No cylinder	
<u>6 Controls</u>		
Space heating controls	Time and temperature zone control	Pass
Hot water controls	No cylinder	
Boiler interlock	Yes	Pass
7 Low energy lights		
Percentage of fixed lights with low-energy fittings	100 %	
Minimum	75 %	Pass
8 Mechanical ventilation		
Continuous extract system		
Specific fan power	0.16	
Maximum	0.7	Pass
Criterion 3 – Limiting the effects of heat gains in	summer	
<u>9 Summertime temperature</u>		
Overheating risk (Thames Valley)	Medium	Pass
Based on:		
Overshading	Average	
Windows facing North East	12.77 m <sup>2</sup> , Overhang twice as wide as window, ratio 0.82	
Windows facing South East	5.45 m <sup>2</sup> , No overhang	
Air change rate	2.00 ach	
Blinds/curtains	Dark-coloured curtain or roller blind, closed 100% of daylight hours	
Criterion 4 – Building performance consistent wi		
Party Walls		
Туре		
	U-value	Pacc
Filled Cavity with Edge Sealing	U-value           0.00         W/m²K	Pass
Filled Cavity with Edge Sealing Air permeability and pressure testing		Pass
Filled Cavity with Edge Sealing Air permeability and pressure testing <u>3 Air permeability</u>	0.00 W/m²K	Pass
Filled Cavity with Edge Sealing Air permeability and pressure testing <u>3 Air permeability</u> Air permeability at 50 pascals	0.00 W/m <sup>2</sup> K 4.00 (design value) m <sup>3</sup> /(h.m <sup>2</sup> ) @ 50 Pa	
Filled Cavity with Edge Sealing Air permeability and pressure testing <u>3 Air permeability</u> Air permeability at 50 pascals Maximum	0.00 W/m²K	Pass
Filled Cavity with Edge Sealing Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals Maximum 10 Key features	0.00       W/m²K         4.00 (design value)       m³/(h.m²) @ 50 Pa         10.0       m³/(h.m²) @ 50 Pa	
Filled Cavity with Edge Sealing Air permeability and pressure testing <u>3 Air permeability</u> Air permeability at 50 pascals	0.00 W/m <sup>2</sup> K 4.00 (design value) m <sup>3</sup> /(h.m <sup>2</sup> ) @ 50 Pa	

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### RECOMMENDATIONS





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