PREDICTED ENERGY ASSESSMENT



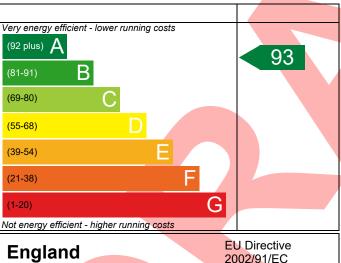
Plot 40, Millfield Nurseries, Spalding Common, Dwelling type: House, Semi-Detached

Spalding, Date of assessment: 24/01/2023 Lincs, Produced by: Jake Eaton PE11 3AU Total floor area: 113.2 m²

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.

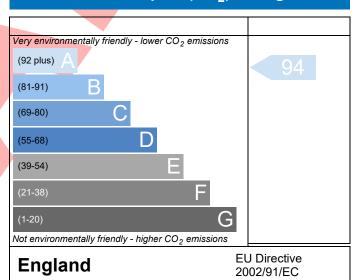
The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO₂) emissions.

Energy Efficiency Rating



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 (CO₂) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO₂) 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.



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



Property Reference PE11 3AU Plot	40				Issued on Date	24/01/202
Assessment 001			P	rop Type Ref	Туре Н	
Reference	lal Niverania a Con	lalia a Car	Coolding	Lines DE11.2	A I I	
Property Plot 40, Millfie	ld Nurseries, Spa	liding Cor	nmon, Spaiding,	Lincs, PEII 3	AU	
SAP Rating	9	93 A	DER	7.71	TER	15.34
Environmental	9	94 A	% DER <ter< td=""><td></td><td>49.74</td><td></td></ter<>		49.74	
CO₂ Emissions (t/year)	0).63	DFEE	37.50	TFEE	47.46
General Requirements Compliance	P	ass	% DFEE <tfee< td=""><td></td><td>20.98</td><td></td></tfee<>		20.98	
Assessor Details Mr. Jake Eaton, Ja	ke Eaton, Tel: 014	40028347	71, jake@aerate	ch.co.uk	Assessor ID	P711-0001
Client						
UMARY FOR INPUT DATA FOR New B	uild (As Designed	i)				
riterion 1 – Achieving the TER and TFI						
a TER and DER						
Fuel for main heating	1	Mains ga	S			
Fuel factor	=	1.00 (mai		7		
Target Carbon Dioxide Emission Rate	=	15.34			kgCO ₂ /m ²	
Dwelling Carbon Dioxide Emission Rate (DER)		7.71			kgCO ₂ /m ²	Pass
_	[-	-7.63 (-49	9.7%)		kgCO ₂ /m ²	
b TFEE and DFEE						
Target Fabric Energy Efficiency (TFEE) Dwelling Fabric Energy Efficiency (DFEE)		47.46			kWh/m²/yr	r
		37.50			kWh/m²/yr	r
	E	-10.0 (-21	1.1%)		kWh/m²/yr	Pass
riterion 2 – Limits on design flexibility						
Limiting Fabric Standards						
2 Fabric U-values						
Element	Average		ŀ	lighest		
External wall	0.21 (max.	0.30)	C).23 (max. 0.7	0)	Pass
Party wall	0.00 (max.	0.20)		-		Pass
Floor	0.12 (max.	0.25)	C).12 (max. 0.7	0)	Pass
Roof	0.12 (max.	0.20)	C).13 (max. 0.3	5)	Pass
Openings	1.38 (max.	2.00)	1	40 (max. 3.3	0)	Pass
2a Thermal bridging						
Thermal bridging calculated from	n linear thermal t	ransmitta	ances for each ju	ınction		
3 Air permeability						
Air permeability at 50 pascals	Ĺ	5.01 (des	ign value)		m³/(h.m²) @ 50 P	Pa .
Maximum	Ī	10.0			m³/(h.m²) @ 50 P	Pass
Limiting System Efficiencies						

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4 Heating efficiency

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



Ideal LOGIC MAX SYSTEM S18 Efficiency: 89.7% SEDBUK2009 Minimum: 88.0% Secondary heating system None Permitted by DBSCG 2.30 Primary pipework insulated Yes Permitted by DBSCG 2.30 Primary pipework insulated Yes Space heating controls Programmer room thermostat and TRVs Pass Hot water controls Cylinderstat Pass Independent timer for DHW Pass Pass Independent timer for DHW Pass Percentage of fixed lights with low-energy fittings Minimum To Set Mechanical ventilation Continuous extract system (decentralised) Specific fan power Maximum Continuous extract system (decentralised) Specific fan power Maximum Summertime temperature Overheating risk (East Pennines) Based on: Overshading Average Windows facing North Windows facing South 10.70 m², No overhang Windows facing West 11.20 m², No overhang Air change rate Blinds/curtains Light-coloured curtain or roller blind, closed 50% of daylight hours Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type Pass Air permeability and pressure testing 3 Air permeability and pressure testing 10.00 m²/(h.m²) @ 50 Pa Pass	Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database	Pass
Secondary heating system None Nominal cylinder loss: 1,79 kWh/day Pass Permitted by DBSCG 2,30 Primary pipework insulated Yes Pass Space heating controls None None Programmer, room thermostat and TRVs Pass None None None None Permitted by DBSCG 2,30 Pass Space heating controls Programmer, room thermostat and TRVs Pass None Pass None None None Pass Space heating controls Programmer, room thermostat and TRVs Pass None Pass None None None Pass Pass None None None None Pass Pass None Non			
Secondary heating system None Nominal cylinder loss: 1,79 kWh/day Pass Permitted by DBSCG 2,30 Primary pipework insulated Yes Pass Space heating controls None None Programmer, room thermostat and TRVs Pass None None None None Permitted by DBSCG 2,30 Pass Space heating controls Programmer, room thermostat and TRVs Pass None Pass None None None Pass Space heating controls Programmer, room thermostat and TRVs Pass None Pass None None None Pass Pass None None None None Pass Pass None Non			
Secondary heating system None S Cylinder insulation Hot water storage Primary pipework insulated Yes Permitted by DBSCG 2:30 Primary pipework insulated Yes Pergrammer, room thermostat and TRVs Pass Space heating controls Hot water controls Cylinderstat Personamer, room thermostat and TRVs Pass Boiler interlock Pess Boiler interlock Pess Percentage of fixed lights with low-energy fittings Minimum To Continuous extract system (decentralised) Specific fan power Outhous extract system (decentralised) Specific fan power Overheating risk (East Pennines) Based on: Overshading Windows facing North Windows facing South Windows facing South Windows facing South Windows facing South Uight-coloured curtain or roller blind, closed 50% of daylight hours Criterion 4 - Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing Out (design value) m³/(h.m²) @ 50 Pa m³/(h.m²) @ 50 Pa			
S Cylinder insulation	Socondary hosting system		<u> </u>
Hot water storage Nominal cylinder loss: 1.79 kWh/day Pass Primary pipework insulated Yes Pass Primary pipework insulated Yes Pass Space heating controls Programmer, room thermostat and TRVs Pass Hot water controls Cylinderstat Pass Boiler interlock Pass Independent timer for DHW Pass Percentage of fixed lights with low-energy fittings Minimum 75 % Pass 3 Mechanical ventilation Pass Nominal cylinder loss Nominal cylinder loss Criterion 3 - Limiting the effects of heat gains in summer 9 Summertime temperature Overheating risk (East Pennines) Slight Pass Based on: Overshading Average Windows facing North 4.76 m², No overhang Windows facing South 1.20 m², No overhang Windows facing South 1.20 m², No overhang Air change rate 4.00 ach Blinds/curtains Light-coloured curtain or roller blind, closed 50% of daylight hours Criterion 4 - Building performance consistent with DER and DFEE rate Party Walls Iype U-value Filled Cavity with Edge Sealing 0.00 W/m²k Pass Air permeability at 50 pascals 5.01 (design value) m²/(h.m²) @ 50 Pa		None] [
Primary pipework insulated Yes Pass 6 Controls Space heating controls Hot water controls Boiler interlock Pess Boiler interlock Pess Boiler interlock Pess Boiler interlock Pess Boiler interlock Percentage of fixed lights with low-energy fittings Minimum To were a water and the w			
Space heating controls Space heating controls Hot water controls Boiler interlock Pass Independent timer for DHW Pass Boiler interlock Pass Independent timer for DHW Pass Pass 7 Low energy lights Percentage of fixed lights with low-energy fittings Minimum Minimum Minimum Maximum Continuous extract system (decentralised) Specific fan power Maximum O,7 Pass Criterion 3 – Limiting the effects of heat gains in summer 9 Summertime temperature Overheating risk (East Pennines) Based on: Overshading Windows facing North Windows facing South Windows facing South Windows facing South Windows facing South Windows facing West Air change rate Blinds/curtains Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing Air permeability and pressure testing 3 Air permeability at 50 pascals	Hot water storage		Pass
Space heating controls Hot water controls Cylinderstat Deass Boiler interlock Pes Pass 7-Low energy lights Percentage of fixed lights with low-energy fittings Minimum Percentage of fixed lights with low-energy fittings Minimum Continuous extract system (decentralised) Specific fan power Maximum Do,7 Pass Criterion 3 – Limiting the effects of heat gains in summer 9-Summertime temperature Overheating risk (East Pennines) Based on: Overshading Average Windows facing North Windows facing North Windows facing South Undows facing South Undows facing South Undows facing West 1,20 m², No overhang Air change rate Blinds/curtains Light-coloured curtain or roller blind, closed 50% of daylight hours Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing O.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability and pressure testing 3 Air permeability and pressure testing 3 Air permeability at 50 pascals	Primary pipework insulated	Yes	Pass
Hot water controls Cylinderstat	<u>6 Controls</u>		
Boiler interlock Yes Pass 7 Low energy lights Percentage of fixed lights with low-energy fittings Minimum 75 8 Mechanical ventilation Continuous extract system (decentralised) Specific fan power Maximum O.7 Pass Criterion 3 – Limiting the effects of heat gains in summer 9 Summertime temperature Overheating risk (East Pennines) Based on: Overshading Average Windows facing North Windows facing South 10.70 m², No overhang Windows facing South 10.70 m², No overhang Light-coloured curtain or roller blind, closed 50% of daylight hours Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing O.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa	Space heating controls	Programmer, room thermostat and TRVs	Pass
Boiler interlock Yes Plass 7 Low energy lights Percentage of fixed lights with low-energy fittings Minimum Tos 8 Mechanical ventilation Continuous extract system (decentralised) Specific fan power Maximum O.7 Pass Criterion 3 – Limiting the effects of heat gains in summer 9 Summertime temperature Overheating risk (East Pennines) Based on: Overshading Windows facing North Windows facing South 10.70 m², No overhang Windows facing South 10.70 m², No overhang Windows facing West 1.20 m², No overhang Windows facing West Light-coloured curtain or roller blind, closed 50% of daylight hours Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing Air permeability and pressure testing 3 Air permeability and pressures testing 3 Air permeability and pressures testing 3 Air permeability and 50 pascals	Hot water controls	Cylinderstat	Pass
7 Low energy lights Percentage of fixed lights with low-energy fittings Minimum 75 % Pass 8 Mechanical ventilation Continuous extract system (decentralised) Specific fan power Maximum 0.7 Pass Criterion 3 – Limiting the effects of heat gains in summer 9 Summertime temperature Overheating risk (East Pennines) Based on: Overshading Windows facing North 4.76 m², No overhang Windows facing South 10.70 m², No overhang Windows facing West Air change rate Blinds/curtains Light-coloured curtain or roller blind, closed 50% of daylight hours Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing 0.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals		Independent timer for DHW	Pass
Percentage of fixed lights with low-energy fittings Minimum 75 % Pass 8 Mechanical ventilation Continuous extract system (decentralised) Specific fan power Maximum 0.7 Pass Criterion 3 – Limiting the effects of heat gains in summer 9 Summertime temperature Overshading Windows facing North Windows facing North Windows facing South Windows facing South Windows facing West Air change rate Blinds/curtains Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Iype U-value Filled Cavity with Edge Sealing 0.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) Mindows facing Was (Pass) Moverage O.1100 0.1400 Weass Pass Air permeability at 50 pascals	Boiler interlock	Yes	Pass
fittings Minimum 75 8 Mechanical ventilation Continuous extract system (decentralised) Specific fan power Maximum O.7 Pass Criterion 3 - Limiting the effects of heat gains in summer 9 Summertime temperature Overheating risk (East Pennines) Based on: Overshading Windows facing North Windows facing South Windows facing West Air change rate Blinds/curtains Criterion 4 - Building performance consistent with DER and DFEE rate Party Walls I ype U-value Filled Cavity with Edge Sealing O.00 W/m²K Pass Air permeability 5.01 (design value) M100 0.1100 0.1400 0.1100 0.1400 Pass	7 Low energy lights		
Minimum 75 % Pass 8 Mechanical ventilation Continuous extract system (decentralised) Specific fan power Maximum 0.7 Pass Criterion 3 – Limiting the effects of heat gains in summer 9 Summertime temperature Overheating risk (East Pennines) Based on: Overshading Average Windows facing North 4.76 m², No overhang Windows facing South 10.70 m², No overhang Windows facing South 1.20 m², No overhang Air change rate 4.00 ach Blinds/curtains Light-coloured curtain or roller blind, closed 50% of daylight hours Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing 0.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa	9 9.	100 %	
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Continuous extract system (decentralised) Specific fan power Maximum D.7 Pass Criterion 3 – Limiting the effects of heat gains in summer 9 Summertime temperature Overheating risk (East Pennines) Based on: Overshading Windows facing North Windows facing South Windows facing South Undows facing West Air change rate Blinds/curtains Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing Air permeability Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) Mass Pass O.1100 0.1400 Pass Ass Augusta 10.70 m², No overhang Average 4.76 m², No overhang Air permeability Air permeability at 50 pascals	8 Mechanical ventilation		
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9 Summertime temperature Overheating risk (East Pennines) Based on: Overshading Windows facing North Windows facing South Windows facing South Windows facing West Air change rate Blinds/curtains Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing O.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals Slight Pass Average			Pass
9 Summertime temperature Overheating risk (East Pennines) Based on: Overshading Windows facing North Windows facing South Windows facing South Windows facing West Air change rate Blinds/curtains Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing O.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals Slight Pass Average	Criterion 3 – Limiting the effects of heat gains in sur	nmer	
Overheating risk (East Pennines) Based on: Overshading Windows facing North Windows facing South Windows facing West Air change rate Blinds/curtains Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing Air permeability Air permeability Air permeability at 50 pascals Slight Pass Average Av			
Based on: Overshading Windows facing North Windows facing South Windows facing West Air change rate Blinds/curtains Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) Manoverhang 4.76 m², No overhang 4.76 m², No overhang 4.76 m², No overhang Light-coloured curtain or roller blind, closed 50% of daylight hours W/m² K Pass Pass 5.01 (design value) m³/(h.m²) @ 50 Pa		Slight	Pass
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Windows facing South Windows facing West Air change rate Blinds/curtains Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa	Overshading	Average	7
Windows facing West Air change rate Blinds/curtains Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing O.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa	Windows facing North	4.76 m², No overhang	Ī
Air change rate Blinds/curtains Light-coloured curtain or roller blind, closed 50% of daylight hours Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing 0.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa			
Light-coloured curtain or roller blind, closed 50% of daylight hours Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing 0.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa		1.20 m ² , No overhang	
Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type Filled Cavity with Edge Sealing 0.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa			
Criterion 4 – Building performance consistent with DER and DFEE rate Party Walls Type U-value Filled Cavity with Edge Sealing 0.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa	Blinds/curtains	, ,	
Party Walls Type Filled Cavity with Edge Sealing 0.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa			
Type Filled Cavity with Edge Sealing 0.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa		DER and DEEE rate	
Filled Cavity with Edge Sealing 0.00 W/m²K Pass Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa			
Air permeability and pressure testing 3 Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa			
Air permeability Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa		0.00 W/m²K	Pass
Air permeability at 50 pascals 5.01 (design value) m³/(h.m²) @ 50 Pa			
Maximum	Air permeability at 50 pascals		
	Maximum	10.0 m ³ /(h.m ²) @ 50 Pa	Pass

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Regs Region: England Elmhurst Energy Systems SAP2012 Calculator (Design System) version 4.14r19

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



10 Key features

External wall U-value Party wall U-value Roof U-value Floor U-value

Photovoltaic array

 0.09
 W/m²K

 0.00
 W/m²K

 0.09
 W/m²K

 0.12
 W/m²K

 1.64
 kW



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