Approved Document L1 2021 Edition, England assessed by Array SAP 10 program, Array

Date: Tue 02 Jan 2024 13:52:05

Project Information				
Assessed By	Harry Hinchliffe	Building Type	Flat, Mid-terrace	
OCDEA Registration	EES/027143	Assessment Date	2024-01-02	

Dwelling Details			
Assessment Type	As designed	Total Floor Area	116 m ²
Site Reference	Flat A - Baseline	Plot Reference	16505
Address	23 Flat A Ravenshaw Street, London, NW6 1NP		

Client Details	
Name	Client
Company	Company
Address	Address, Town, AA11 1AA

1a Target emission rate and dwelling emission rate				
Fuel for main heating system	Mains gas			
Target carbon dioxide emission rate	11.03 kgCO ₂ /m ²			
Dwelling carbon dioxide emission rate	4.0 kgCO ₂ /m ²	OK		
1b Target primary energy rate and dwelling primary energy				
Target primary energy	57.72 kWh _{PE} /m ²			
Dwelling primary energy	21.66 kWh _{PE} /m ²	OK		
1c Target fabric energy efficiency and dwelling fabric energy efficiency				
Target fabric energy efficiency	38.9 kWh/m ²			
Dwelling fabric energy efficiency	36.8 kWh/m ²	OK		

2a Fabric U-values					
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value		
External walls	0.26	0.18	Walls (1) (0.18)	OK	
Party walls	0.2	N/A	N/A	N/A	
Curtain walls	1.6	N/A	N/A	N/A	
Floors	0.18	0.15	Ground Floor (0.15)	OK	
Roofs	0.16	0.15	Roof (1) (0.15)	OK	
Windows, doors,	1.6	1.3	NE Sliding Doors (1.3)	OK	
and roof windows					
Rooflights	2.2	1.3	Rooflights, South West (1.3)	ОК	

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))				
Name	Net area [m ²]	U-Value [W/m ² K]		
Exposed wall: Walls (1)	13.54	0.18		
Ground floor: Ground Floor, Ground Floor	115.6	0.15		
Exposed roof: Roof (1)	2	0.15		

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
NE Sliding Doors, Glazing	8.5	North East	1.0	1.3
SW Doors, Glazing	16.06	South West	1.0	1.3
Rooflights, Rooflights	20.36	South West	1.0	1.3

Building part 1 -	wain Dweiling: Thermal bridging c	alculated from linear thermal transmit	tances for eac	n junction
Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.019 (!)	
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	

Main element Junction detail		Source	Psi value [W/mK]	Drawing / reference		
External wall E5: Ground floor (normal)	al) Calculated by person with suitable expertise				
External wall E7: Party floor bet (in blocks of flats)	ween dwellings					
External wall E16: Corner (norn	nal)	Calculated by person with suitable expertise	0.042			
3 Air permeability (better than typ	ically expected		uent (!))	·		
Maximum permitted air permeability	at 50Pa	8 m ³ /hm ²				
Dwelling air permeability at 50Pa		4 m ³ /hm ² , Design value		OK		
Air permeability test certificate refere	ence					
4 Space heating	and the terms of the second					
Main heating system 1: Boiler with		erfloor heating - Mains gas				
Efficiency	83.5%					
Emitter type Flow temperature	Radiators 35°C					
	Combi boil	or				
System type Manufacturer	Intergas He					
Manufacturer	Xtreme 36					
Commissioning						
Main heating system 2: Heat pump	with radiators o	r underfloor beating - Electricity				
Efficiency	320.1%					
Emitter type	Underfloor					
Flow temperature	35°C					
System type	Heat Pump)				
Manufacturer		Electric Europe B.V.				
Model	ECODAN 5					
Commissioning						
Secondary heating system: N/A						
Fuel	N/A					
Efficiency	N/A					
Commissioning						
5 Hot water						
Cylinder/store - type: N/A						
Capacity	N/A					
Declared heat loss	N/A					
Primary pipework insulated	N/A					
Manufacturer						
Model						
Commissioning						
Waste water heat recovery system		taneous				
Efficiency	76.0%					
Manufacturer	Q-Blue B.V					
Model	Blue QB1-2	21D				
6 Controls						
Main heating 1 - type: Time and ter	nperature zone c	control by arrangement of plumbing a	and electrical s	ervices		
Function						
Ecodesign class						
Manufacturer						
Model						
Main heating 2 - type: Not applicab	le					
Function						
	Ecodesign class					
Manufacturer						
Model						
Model Water heating - type: N/A						
Model						

7 Lighting			
	75 100 / 1/		
Minimum permitted light source efficacy	75 lm/W		01/
Lowest light source efficacy	120 lm/W		OK
External lights control	N/A		
8 Mechanical ventilation			
System type: Balanced whole-house me	echanical ventilation w	vith heat recovery	
Maximum permitted specific fan power	1.5 W/(I/s)		
Specific fan power	0.59 W/(l/s)		OK
Minimum permitted heat recovery	73%		
efficiency			
Heat recovery efficiency	89%		OK
Manufacturer/Model	MRXBOXAB-ECO2		
Commissioning			
9 Local generation			
Technology type: Photovoltaic system			
Peak power	1.3775 kWp		
Orientation	South		
Pitch	30°		
Overshading	None or very little		
Manufacturer			
MCS certificate			
10 Heat networks			
N/A			
11 Supporting documentary evidence			
N/A			
12 Declarations			
a. Assessor Declaration			
	nfirmation that the co	ntents of this BREL Compliance Report	
		formation submitted for this dwelling for	
the purpose of carrying out the "As de			
evidence (SAP Conventions, Appendi			
documentary evidence required) has			
		course of preparing this BREL	
Compliance Report.			
Signadi		Assessor ID:	
Signed:		ASSESSUI ID.	
Name:		Date:	
		Dale.	
b. Client Declaration			
N/A			

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Project Information				
Assessed By	Harry Hinchliffe	Building Type	Flat, Mid-terrace	
OCDEA Registration	EES/027143	Assessment Date	2024-01-02	

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m ²
Site Reference	Flat B - Baseline	Plot Reference	16505
Address	23 Flat A Ravenshaw Street, London, NW6 1NP		

Client Details	
Name	Client
Company	Company
Address	Address, Town, AA11 1AA

1a Target emission rate and dwelling emission rate				
Fuel for main heating system	Mains gas			
Target carbon dioxide emission rate	10.35 kgCO ₂ /m ²			
Dwelling carbon dioxide emission rate	4.35 kgCO ₂ /m ²	OK		
1b Target primary energy rate and dwelling primary energy				
Target primary energy	54.04 kWh _{PE} /m ²			
Dwelling primary energy	23.48 kWh _{PE} /m ²	OK		
1c Target fabric energy efficiency and dwelling fabric energy efficiency				
Target fabric energy efficiency	33.3 kWh/m ²			
Dwelling fabric energy efficiency	26.6 kWh/m ²	OK		

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.15	Ground Floor (0.15)	OK
Roofs	0.16	N/A	N/A	N/A
Windows, doors,	1.6	1.3	NE Sliding Doors (1.3)	OK
and roof windows				
Rooflights	2.2	N/A	N/A	N/A

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))			
Name	Net area [m ²]	U-Value [W/m ² K]	
Exposed wall: Walls (1)	13.54	0.18	
Ground floor: Ground Floor, Ground Floor	112.1	0.15	
	•		

2c Openings (better than typically expected values are flagged with a subsequent (!))					
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]	
NE Sliding Doors, Glazing	8.5	North East	1.0	1.3	
Opening, Glazing	16.06	South West	1.0	1.3	

Ballanig part I	Main Dwelling: Thermal bridging c			njunction
Main element	Junction detail	Source	Psi value	Drawing /
			[W/mK]	reference
External wall	E2: Other lintels (including other	Calculated by person with suitable	0.019 (!)	
	steel lintels)	expertise		
External wall	E3: Sill	Calculated by person with suitable	0.022 (!)	
		expertise		
External wall	E4: Jamb	Calculated by person with suitable	0.017 (!)	
		expertise		
External wall	E5: Ground floor (normal)	Calculated by person with suitable	0.075	
		expertise		

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E7: Party floor betweer (in blocks of flats)	n dwellings	Calculated by person with suitable expertise	-	
External wall	E16: Corner (normal)		Calculated by person with suitable expertise	0.042	
2 Air pormoobili	ty (bottor than typically	vovpoctod	values are flagged with a subsequ	uont(I)	
	ted air permeability at 50		8 m ³ /hm ²	uent (! <i>))</i>	
Dwelling air perm		Ла	4 m ³ /hm ² , Design value		ОК
	est certificate reference				UK
4 Space heating					
Main heating sy	stem 1: Boiler with radia	ators or unde	erfloor heating - Mains gas		
Efficiency		83.5%			
Emitter type		Underfloor			
Flow temperature	Э	35°C			
System type		Combi boile	=		
Manufacturer		Intergas He	eating Ltd		
Model		Xtreme 36			
Commissioning					
	stem 2: Heat pump with		underfloor heating - Electricity		
Efficiency		244.7%			
Emitter type		Underfloor 35°C			
Flow temperature	9				
System type		Heat Pump	Electric Europe B.V.		
Manufacturer Model		ECODAN 5			
Commissioning		ECODANS	JK V V		
Secondary heat	ing system: N/A				
Fuel		N/A			
Efficiency		N/A			
Commissioning					
		1			
5 Hot water	· • • • • • • • • • • • • • • • • • • •				
Cylinder/store -	type: N/A				
Capacity Declared heat los		N/A N/A			
Primary pipework		N/A N/A			
Manufacturer	(Insulated	IN/A			
Manufacturer					
Commissioning					
	at recovery system 1 -	tvpe: Instant	aneous		
Efficiency		61.2%			
Manufacturer		Q-Blue B.V			
Model		Blue QB1-2			
6 Controls	type: Time and temper	aturo zono o	ontrol by arrangement of plumbing a	and electrical a	arvices
	· type: Time and tempera	ature zone c	ontrol by arrangement of plumbing a	ind electrical s	ervices
Function Ecodesign class					
Manufacturer					
Model					
	type: Not applicable				
Function	., por tot applicable				
Ecodesign class					
Ecodesign class Manufacturer					
Manufacturer	type: N/A				
Manufacturer Model	type: N/A				
Manufacturer Model Water heating -	type: N/A				
Manufacturer Model Water heating - Manufacturer Model	type: N/A				
Manufacturer Model Water heating - Manufacturer Model 7 Lighting		75 Im/M			
Manufacturer Model Water heating - Manufacturer Model 7 Lighting Minimum permitt	ed light source efficacy	75 Im/W 120 Im/W			OK
Manufacturer Model Water heating - Manufacturer Model 7 Lighting	ed light source efficacy ce efficacy	75 Im/W 120 Im/W N/A			ОК

8 Mechanical ventilation	8 Mechanical ventilation				
System type: Balanced whole-house mechanical ventilation with heat recovery					
Maximum permitted specific fan power					
Specific fan power	0.59 W/(I/s) OK				
Minimum permitted heat recovery	73%				
ficiency					
Heat recovery efficiency	89%				
Manufacturer/Model	MRXBOXAB-ECO2				
Commissioning					
9 Local generation					
Technology type: Photovoltaic system	(1)				
Peak power	1.3775 kWp				
Orientation	South				
Pitch	30°				
Overshading	None or very little				
Manufacturer	, í				
MCS certificate					
10 Heat networks					
N/A					
11 Supporting documentary evidence					
11 Supporting documentary evidence N/A					
N/A 12 Declarations					
N/A 12 Declarations a. Assessor Declaration					
N/A 12 Declarations a. Assessor Declaration	nfirmation that the cc	ntents of this BREL Compliance Report			
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas	ed upon the design ir	formation submitted for this dwelling for			
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de	ed upon the design ir signed" assessment,	formation submitted for this dwelling for and that the supporting documentary			
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Project Information				
Assessed By	Harry Hinchliffe	Building Type	Flat, Mid-terrace	
OCDEA Registration	EES/027143	Assessment Date	2024-01-02	

Dwelling Details			
Assessment Type	As designed	Total Floor Area	71 m ²
Site Reference	Flat C - Baseline	Plot Reference	16505
Address	23 Flat C Ravenshaw Street, L	ondon, NW6 1NP	

Client Details	
Name	Client
Company	Company
Address	Address, Town, AA11 1AA

1a Target emission rate and dwelling emission rate					
Fuel for main heating system	Mains gas				
Target carbon dioxide emission rate	10.31 kgCO ₂ /m ²				
Dwelling carbon dioxide emission rate	4.34 kgCO ₂ /m ²	OK			
1b Target primary energy rate and dwelling primary ener	1b Target primary energy rate and dwelling primary energy				
Target primary energy	54.14 kWh _{PE} /m ²				
Dwelling primary energy	16.89 kWh _{PE} /m ²	OK			
1c Target fabric energy efficiency and dwelling fabric energy efficiency					
Target fabric energy efficiency	21.8 kWh/m ²				
Dwelling fabric energy efficiency	12.6 kWh/m ²	OK			

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	N/A	N/A	N/A
Roofs	0.16	N/A	N/A	N/A
Windows, doors,	1.6	0.4	NE Windows (0.4)	OK
and roof windows				
Rooflights	2.2	N/A	N/A	N/A

Name			Net area [m ²]	U-Value [W/m ² K]
Exposed wall: Walls (1)			29.86	0.18
2c Openings (better than typic	cally expected values ar	e flagged with a sub	sequent (!))	
ze openings (better than typic		c naggea min a sub		
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
				U-Value [W/m ² K]

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.019 (!)	
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E16: Corner (normal)		Calculated by person with suitable expertise		
3 Air permeabil	ity (better than typical	v expected	values are flagged with a subsequ	uent (I))	
	tted air permeability at 5		8 m ³ /hm ²		
	neability at 50Pa	0. 4	4 m ³ /hm ² , Design value		OK
	test certificate reference				U.
4 Space heating					
		ators or und	erfloor heating - Mains gas		
Efficiency		83.2%			
Emitter type		Radiators			
Flow temperatur	е	35°C			
System type		Combi boil	er		
Manufacturer Intergas H		eating Ltd			
Model		Xtreme 24			
Commissioning					
	stem 2: Heat pump with	n radiators o	r underfloor heating - Electricity		
Efficiency		231.5%			
Emitter type		Underfloor			
Flow temperatur	e	45°C			
System type		Heat Pump			
Manufacturer		Vaillant Gr	oup UK Ltd		
Model		aroTHERM	l plus 3.5kW & Al		
Commissioning					
	ting system: N/A				
Fuel		N/A			
Efficiency		N/A			
Commissioning					
5 Hot water					
Cylinder/store -	type: N/A				
Capacity	type. tw//	N/A			
Declared heat lo	22	N/A			
Primary pipewor		N/A			
Manufacturer					
Model					
Commissioning					
	at recovery system 1 -	type: Instan	taneous		
		61.2%			
Manufacturer		Q-Blue B.V	<i>.</i>		
Model		Blue QB1-2			
6 Controls					
	- type: Time and temper	ature zone c	control by arrangement of plumbing a	and electrical s	ervices
Function	gpc. The and temper		and by an angement of plumbing a	and ciecuital 3	
Ecodesign class					
Manufacturer					
Model					
	- type: Not applicable	1			
Function	.,				
Ecodesign class					
Manufacturer					
Model					
Water heating -	type: N/A	1			
Manufacturer	-VI				
Model					
		1			
7 Lighting					
	ted light source efficacy	75 lm/W			
Lowest light sou		120 lm/W			OK
External lights co	ontrol	N/A			

8 Mechanical ventilation			
System type: Balanced whole-house me	echanical ventilation v	vith heat recovery	
Maximum permitted specific fan power	1.5 W/(I/s)		
Specific fan power	0.59 W/(l/s)		OK
Minimum permitted heat recovery	73%		
efficiency			
Heat recovery efficiency	89%		OK
Manufacturer/Model	MRXBOXAB-ECO2		
Commissioning			
9 Local generation			
Technology type: Photovoltaic system	(1)		
Peak power	1.3775 kWp		
Orientation	South		
Pitch	30°		
Overshading	None or very little		
Manufacturer	, í		
MCS certificate			
10 Heat networks			
N/A			
11 Supporting documentary evidence			
11 Supporting documentary evidence N/A			
N/A 12 Declarations			
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Date: Tue 02 Jan 2024 13:53:04

Project Information			
Assessed By	Harry Hinchliffe	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/027143	Assessment Date	2024-01-02

Dwelling Details			
Assessment Type	As designed	Total Floor Area	70 m ²
Site Reference	Flat D - Baseline	Plot Reference	16505
Address	23 Flat C Ravenshaw Street, L	ondon, NW6 1NP	

Client Details	
Name	Client
Company	Company
Address	Address, Town, AA11 1AA

1a Target emission rate and dwelling emission rate		
Fuel for main heating system	Mains gas	
Target carbon dioxide emission rate	11.74 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	4.0 kgCO ₂ /m ²	OK
1b Target primary energy rate and dwelling primary energy	ענ	
Target primary energy	61.81 kWh _{PE} /m ²	
Dwelling primary energy	15.26 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric ene		
Target fabric energy efficiency	27.9 kWh/m ²	
Dwelling fabric energy efficiency	14.8 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	N/A	N/A	N/A
Roofs	0.16	N/A	N/A	N/A
Windows, doors,	1.6	0.4	NE Windows (0.4)	OK
and roof windows				
Rooflights	2.2	N/A	N/A	N/A

Name			Net area [m ²]	U-Value [W/m ² K]
Exposed wall: Walls (1)			29.86	0.18
2c Openings (better than typic	cally expected values ar	e flagged with a sub	sequent (1))	
Zo Opennigs (Deller than typic	any expected values at	c naggea with a sub		
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
				U-Value [W/m ² K]

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.019 (!)	
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.075	

1	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E7: Party floor between (in blocks of flats)	dwellings	Calculated by person with suitable expertise		
External wall	E16: Corner (normal)		Calculated by person with suitable	0.042	
			expertise		
			values are flagged with a subsequ	uent (!))	
	ed air permeability at 50)Pa	$8 m^3/hm^2$		
Dwelling air perm	eability at 50Pa		4 m ³ /hm ² , Design value		OK
4 Space heating Main heating sys	stem 1: Boiler with radia	ators or unde	erfloor heating - Mains gas		
Efficiency		83.2%			
Emitter type		Radiators			
Flow temperature	•	35°C			
System type Manufacturer		Combi boile	=		
Manufacturer		Intergas He Xtreme 24			
Commissioning		7.0000 24			
v	stem 2: Heat pump with	radiators or	underfloor heating - Electricity		
Efficiency		234.2%			
Emitter type		Underfloor			
Flow temperature	9	45°C			
System type		Heat Pump			
Manufacturer		Vaillant Gro			
Model		aroTHERM	plus 3.5kW & Al		
Commissioning	NI/A				
Secondary heati	ng system: N/A	N/A			
Efficiency		N/A N/A			
Commissioning					
5 Hot water	(
Cylinder/store - Capacity	type: N/A	N/A			
Declared heat los	s	N/A			
Primary pipework		N/A			
Manufacturer					
Model					
Commissioning					
	t recovery system 1 -		aneous		
Efficiency		76.0%			
Manufacturer Model		Q-Blue B.V			
Model		QB1-21D			
6 Controls					
	type: Time and tempera	ature zone c	ontrol by arrangement of plumbing a	and electrical s	ervices
Function					
Ecodesign class					
Manufacturer	Model				
Manufacturer Model	type: Not applicable				
Manufacturer Model	type: Not applicable				
Manufacturer Model Main heating 2 -	type: Not applicable				
Manufacturer Model Main heating 2 - Function	type: Not applicable				
Manufacturer Model Main heating 2 - Function Ecodesign class Manufacturer Model					
Manufacturer Model Main heating 2 - Function Ecodesign class Manufacturer Model Water heating - 1					
Manufacturer Model Main heating 2 - Function Ecodesign class Manufacturer Model Water heating - 1 Manufacturer					
Manufacturer Model Main heating 2 - Function Ecodesign class Manufacturer Model Water heating - 1					
Manufacturer Model Main heating 2 - Function Ecodesign class Manufacturer Model Water heating - 1 Manufacturer					
Manufacturer Model Main heating 2 - Function Ecodesign class Manufacturer Model Water heating - 1 Manufacturer Model 7 Lighting Minimum permitter	ype: N/A	75 lm/W			
Manufacturer Model Main heating 2 - Function Ecodesign class Manufacturer Model Water heating - 1 Manufacturer Model 7 Lighting	ed light source efficacy	75 <i>lm/W</i> 120 lm/W N/A			OK

8 Mechanical ventilation	8 Mechanical ventilation					
System type: Balanced whole-house mechanical ventilation with heat recovery						
Maximum permitted specific fan power	1.5 W/(I/s)					
Specific fan power	0.59 W/(l/s)		OK			
Minimum permitted heat recovery	73%					
efficiency						
Heat recovery efficiency	89%		OK			
Manufacturer/Model	MRXBOXAB-ECO2					
Commissioning						
9 Local generation						
Technology type: Photovoltaic system	(1)					
Peak power	1.3775 kWp					
Orientation	South					
Pitch	30°					
Overshading	None or very little					
Manufacturer	, í					
MCS certificate						
10 Heat networks						
N/A						
11 Supporting documentary evidence						
11 Supporting documentary evidence N/A						
N/A 12 Declarations						
N/A 12 Declarations a. Assessor Declaration						
N/A 12 Declarations a. Assessor Declaration	nfirmation that the cc	ntents of this BREL Compliance Report				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas	ed upon the design ir	formation submitted for this dwelling for				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de	ed upon the design ir signed" assessment,	formation submitted for this dwelling for and that the supporting documentary				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas	ed upon the design ir signed" assessment,	formation submitted for this dwelling for and that the supporting documentary				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de	ed upon the design ir signed" assessment, x 1 (documentary evi	formation submitted for this dwelling for and that the supporting documentary dence) schedules the minimum				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de evidence (SAP Conventions, Appendi	ed upon the design ir signed" assessment, x 1 (documentary evi	formation submitted for this dwelling for and that the supporting documentary dence) schedules the minimum				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de evidence (SAP Conventions, Appendid documentary evidence required) has	ed upon the design ir signed" assessment, x 1 (documentary evi	formation submitted for this dwelling for and that the supporting documentary dence) schedules the minimum				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de evidence (SAP Conventions, Appendid documentary evidence required) has Compliance Report.	ed upon the design ir signed" assessment, x 1 (documentary evi	formation submitted for this dwelling for and that the supporting documentary dence) schedules the minimum course of preparing this BREL				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de evidence (SAP Conventions, Appendid documentary evidence required) has	ed upon the design ir signed" assessment, x 1 (documentary evi	formation submitted for this dwelling for and that the supporting documentary dence) schedules the minimum				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de evidence (SAP Conventions, Appendid documentary evidence required) has Compliance Report.	ed upon the design ir signed" assessment, x 1 (documentary evi	formation submitted for this dwelling for and that the supporting documentary dence) schedules the minimum course of preparing this BREL				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de evidence (SAP Conventions, Appendid documentary evidence required) has Compliance Report. Signed:	ed upon the design ir signed" assessment, x 1 (documentary evi	formation submitted for this dwelling for and that the supporting documentary dence) schedules the minimum course of preparing this BREL Assessor ID:				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de evidence (SAP Conventions, Appendid documentary evidence required) has Compliance Report.	ed upon the design ir signed" assessment, x 1 (documentary evi	formation submitted for this dwelling for and that the supporting documentary dence) schedules the minimum course of preparing this BREL				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de evidence (SAP Conventions, Appendidocumentary evidence required) has Compliance Report. Signed: Name:	ed upon the design ir signed" assessment, x 1 (documentary evi	formation submitted for this dwelling for and that the supporting documentary dence) schedules the minimum course of preparing this BREL Assessor ID:				
N/A 12 Declarations a. Assessor Declaration This declaration by the assessor is co are a true and accurate reflection bas the purpose of carrying out the "As de evidence (SAP Conventions, Appendid documentary evidence required) has Compliance Report. Signed:	ed upon the design ir signed" assessment, x 1 (documentary evi	formation submitted for this dwelling for and that the supporting documentary dence) schedules the minimum course of preparing this BREL Assessor ID:				

Approved Document L1 2021 Edition, England assessed by Array SAP 10 program, Array

Date: Tue 02 Jan 2024 13:53:35

Project Information			
Assessed By	Harry Hinchliffe	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/027143	Assessment Date	2024-01-02

Dwelling Details			
Assessment Type	As designed	Total Floor Area	107 m ²
Site Reference	Flat E - Baseline	Plot Reference	16505
Address	23 Flat C Ravenshaw Street, L	ondon, NW6 1NP	

Client Details	
Name	Client
Company	Company
Address	Address, Town, AA11 1AA

1a Target emission rate and dwelling emission rate					
Fuel for main heating system	Mains gas				
Target carbon dioxide emission rate	9.02 kgCO ₂ /m ²				
Dwelling carbon dioxide emission rate	3.97 kgCO ₂ /m ²	OK			
1b Target primary energy rate and dwelling primary energy	ענ				
Target primary energy	47.03 kWh _{PE} /m ²				
Dwelling primary energy	20.74 kWh _{PE} /m ²	OK			
1c Target fabric energy efficiency and dwelling fabric energy efficiency					
Target fabric energy efficiency	25.4 kWh/m ²				
Dwelling fabric energy efficiency	17.8 kWh/m ²	OK			

2a Fabric U-values					
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value		
External walls	0.26	0.18	Walls (1) (0.18)	OK	
Party walls	0.2	N/A	N/A	N/A	
Curtain walls	1.6	N/A	N/A	N/A	
Floors	0.18	N/A	N/A	N/A	
Roofs	0.16	0.15	Roof (1) (0.15)	OK	
Windows, doors,	1.6	0.54	Rear Velux (1.2)	OK	
and roof windows					
Rooflights	2.2	N/A	N/A	N/A	

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))					
Name	Net area [m ²]	U-Value [W/m ² K]			
Exposed wall: Walls (1)	45.96	0.18			
Exposed wall: Walls (2)	27.29	0.18			
Exposed roof: Roof (1)	47.53	0.15			

2c Openings (better than typically expected values are flagged with a subsequent (!))					
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]	
NE Windows, Glazing	2.67	North East	1.0	0.4 (!)	
SW Windows, Glazing	7.66	South West	1.0	0.4 (!)	
Rear Velux, Velux Rooflights	0.72	South West	1.0	1.2	
Front Velux, Velux Rooflights	1.44	South West	1.0	1.2	

		ed values are flagged with a subs			
Building part 1 -	Main Dwelling: Thermal bridging ca	alculated from linear thermal transmit	tances for each jι	unction	
Main element Junction detail Source Psi value Drawing					
			[W/mK]	reference	
External wall	E2: Other lintels (including other	Calculated by person with suitable	0.019 (!)		
	steel lintels)	expertise			
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)		

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb		Calculated by person with suitable expertise		
External wall	E7: Party floor betweer (in blocks of flats)	n dwellings	Calculated by person with suitable expertise	0.037 (!)	
External wall	E16: Corner (normal)		Calculated by person with suitable expertise	0.042	
			values are flagged with a subsequ	uent (!))	·
	tted air permeability at 50)Pa	8 m ³ /hm ²		
	neability at 50Pa test certificate reference		4 m ³ /hm ² , Design value		OK
4 Space heating		toro or und	erfloor heating - Mains gas		
Efficiency	Stem T. Doner with ratio	83.5%	emoor heating - Mains gas		
Emitter type		Radiators			
Flow temperatur	 e	35°C			
System type		Combi boil	er		
Manufacturer		Intergas He			
Model		Xtreme 36	<u> </u>		
Commissioning					
Main heating sy	/stem 2: Heat pump with	radiators o	r underfloor heating - Electricity		
Efficiency	<u>·</u>	123.6%			
Emitter type		Underfloor			
Flow temperatur	e	35°C			
System type		Heat Pump			
Manufacturer			Electric Europe B.V.		
Model		ECODAN 5	5kW		
Commissioning					
	ting system: N/A	1			
Fuel		N/A			
Efficiency		N/A			
Commissioning					
5 Hot water					
Cylinder/store ·					
	type: N/A				
Capacity		N/A			
Declared heat lo	SS	N/A			
Declared heat lo Primary pipewor	SS				
Declared heat lo Primary pipewor Manufacturer	SS	N/A			
Declared heat lo Primary pipewor Manufacturer Model	SS	N/A			
Declared heat lo Primary pipewor Manufacturer Model Commissioning	ss k insulated	N/A N/A	200000		
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he	SS	N/A N/A type: Instan	taneous		
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency	ss k insulated	N/A N/A type: Instan 76.0%			
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer	ss k insulated	N/A N/A type: Instan 76.0% Q-Blue B.V			
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model	ss k insulated	N/A N/A type: Instan 76.0%			
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls	ss k insulated at recovery system 1 -	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical s	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1	ss k insulated at recovery system 1 -	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D		and electrical s	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function	ss k insulated at recovery system 1 - type: Time and tempera	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical s	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class	ss k insulated at recovery system 1 - type: Time and tempera	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical s	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer	ss k insulated at recovery system 1 - type: Time and tempera	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical s	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model	ss k insulated at recovery system 1 -	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical s	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model	ss k insulated at recovery system 1 - type: Time and tempera	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical s	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model Main heating 2 Function	ss k insulated at recovery system 1 - - type: Time and tempera - type: Not applicable	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical s	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model Main heating 2	ss k insulated at recovery system 1 - - type: Time and tempera - type: Not applicable	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical s	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model Main heating 2 Function Ecodesign class	ss k insulated at recovery system 1 - - type: Time and tempera - type: Not applicable	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model Main heating 2 Function Ecodesign class Manufacturer	ss k insulated at recovery system 1 - - type: Time and tempera - type: Not applicable	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model Main heating 2 Function Ecodesign class Manufacturer Model	ss k insulated at recovery system 1 - - type: Time and tempera - type: Not applicable	N/A N/A type: Instan 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical s	ervices

7 Lighting			
	75 100 / 1/		
Minimum permitted light source efficacy	75 lm/W		01/
Lowest light source efficacy	120 lm/W		OK
External lights control	N/A		
8 Mechanical ventilation			
System type: Balanced whole-house me	echanical ventilation w	vith heat recovery	
Maximum permitted specific fan power	1.5 W/(I/s)		
Specific fan power	0.59 W/(l/s)		OK
Minimum permitted heat recovery	73%		
efficiency			
Heat recovery efficiency	89%		OK
Manufacturer/Model	MRXBOXAB-ECO2		
Commissioning			
9 Local generation			
Technology type: Photovoltaic system			
Peak power	1.3775 kWp		
Orientation	South		
Pitch	30°		
Overshading	None or very little		
Manufacturer			
MCS certificate			
10 Heat networks			
N/A			
11 Supporting documentary evidence			
N/A			
12 Declarations			
a. Assessor Declaration			
	nfirmation that the co	ntents of this BREL Compliance Report	
		formation submitted for this dwelling for	
the purpose of carrying out the "As de			
evidence (SAP Conventions, Appendi			
documentary evidence required) has			
		course of preparing this BREL	
Compliance Report.			
Signadi		Assessor ID:	
Signed:		ASSESSUI ID.	
Name:		Date:	
		Dale.	
b. Client Declaration			
N/A			

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Date: Tue 02 Jan 2024 13:54:07

Project Information					
Assessed By	Harry Hinchliffe	Building Type	Flat, Mid-terrace		
OCDEA Registration	EES/027143	Assessment Date	2024-01-02		

Dwelling Details					
Assessment Type	As designed	Total Floor Area	117 m ²		
Site Reference	Flat F - Baseline	Plot Reference	16505		
Address	23 Flat C Ravenshaw Street, L	ondon, NW6 1NP			

Client Details	
Name	Client
Company	Company
Address	Address, Town, AA11 1AA

1a Target emission rate and dwelling emission rate						
Fuel for main heating system	Mains gas					
Target carbon dioxide emission rate	get carbon dioxide emission rate 8.54 kgCO ₂ /m ²					
Dwelling carbon dioxide emission rate	3.78 kgCO ₂ /m ²	OK				
1b Target primary energy rate and dwelling primary energy	1b Target primary energy rate and dwelling primary energy					
Target primary energy	44.49 kWh _{PE} /m ²					
Dwelling primary energy	20.26 kWh _{PE} /m ²	OK				
1c Target fabric energy efficiency and dwelling fabric energy efficiency						
Target fabric energy efficiency 24.9 kWh/m ²						
Dwelling fabric energy efficiency 17.8 kWh/m ² OK						

2a Fabric U-values					
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value		
External walls	0.26	0.18	Walls (1) (0.18)	OK	
Party walls	0.2	N/A	N/A	N/A	
Curtain walls	1.6	N/A	N/A	N/A	
Floors	0.18	N/A	N/A	N/A	
Roofs	0.16	0.15	Roof (1) (0.15)	OK	
Windows, doors,	1.6	0.54	Rear Velux (1.2)	OK	
and roof windows					
Rooflights	2.2	N/A	N/A	N/A	

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))					
Name	Net area [m ²]	U-Value [W/m ² K]			
Exposed wall: Walls (1)	45.96	0.18			
Exposed wall: Walls (2)	27.29	0.18			
Exposed roof: Roof (1)	47.53	0.15			

2c Openings (better than typically expected values are flagged with a subsequent (!))					
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]	
NE Windows, Glazing	2.67	North East	1.0	0.4 (!)	
SW Windows, Glazing	7.66	South West	1.0	0.4 (!)	
Rear Velux, Velux Rooflights	0.72	South West	1.0	1.2	
Front Velux, Velux Rooflights	1.44	South West	1.0	1.2	

		ed values are flagged with a subs		
Building part 1 -	Main Dwelling: Thermal bridging ca	alculated from linear thermal transmit	tances for each ju	unction
Main element Junction detail Source Psi value Drawing				
			[W/mK]	reference
External wall	E2: Other lintels (including other	Calculated by person with suitable	0.019 (!)	
	steel lintels)	expertise		
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	

Main element	t Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb		Calculated by person with suitable expertise	0.017 (!)	
External wall	E7: Party floor between (in blocks of flats)	dwellings	Calculated by person with suitable expertise	0.037 (!)	
External wall	E16: Corner (normal)		Calculated by person with suitable expertise	0.042	
			values are flagged with a subsequ	uent (!))	• •
	tted air permeability at 50)Pa	8 m ³ /hm ²		
	neability at 50Pa test certificate reference		4 m ³ /hm ² , Design value		OK
4 Space heating	q				
		ators or unde	erfloor heating - Mains gas		
Efficiency		83.5%	U		
Emitter type		Radiators			
Flow temperatur	e	35°C			
System type		Combi boile			
Manufacturer		Intergas He	eating Ltd		
Model		Xtreme 36			
Commissioning					
	stem 2: Heat pump with		r underfloor heating - Electricity		
Efficiency		133.6%			
Emitter type		Underfloor			
Flow temperatur	e	35°C			
System type		Heat Pump			
Manufacturer			Electric Europe B.V.		
Model		ECODAN 5	DKVV		
Commissioning	(*) NI/A				
Secondary hea	ting system: N/A				
FUEL		NI/A			
		N/A			
Efficiency Commissioning		N/A N/A			
Efficiency Commissioning					
Efficiency Commissioning 5 Hot water	- type: N/A				
Efficiency Commissioning 5 Hot water Cylinder/store -	· type: N/A				
Efficiency Commissioning 5 Hot water		N/A			
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity	PSS	N/A N/A			
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo	PSS	N/A N/A N/A			
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor	PSS	N/A N/A N/A			
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning	iss k insulated	N/A N/A N/A N/A			
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water heat	PSS	N/A N/A N/A N/A	taneous		
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency	iss k insulated	N/A N/A N/A N/A type: Instant 76.0%			
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer	iss k insulated	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V			
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model	iss k insulated	N/A N/A N/A N/A type: Instant 76.0%			
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls	ss k insulated at recovery system 1 - 1	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>		
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1	ss k insulated at recovery system 1 - 1	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D		and electrical se	ervices
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function	ss k insulated at recovery system 1 - 1 - type: Time and tempera	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class	ss k insulated at recovery system 1 - 1 - type: Time and tempera	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer	ss k insulated at recovery system 1 - 1 - type: Time and tempera	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model	ss k insulated at recovery system 1 - 1 - type: Time and tempera	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model 4 Controls	ss k insulated at recovery system 1 - 1 - type: Time and tempera	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model 5 Controls Main heating 2 Function	eat recovery system 1 - 1 - type: Time and tempera - type: Not applicable	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model 5 Hot main heating 2 Function Ecodesign class	eat recovery system 1 - 1 - type: Time and tempera - type: Not applicable	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model Main heating 2 Function	eat recovery system 1 - 1 - type: Time and tempera - type: Not applicable	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model 5 Hot in Ecodesign class Manufacturer Model Ecodesign class Manufacturer Model	ss k insulated •at recovery system 1 - t - type: Time and tempera - type: Not applicable	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices
Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model 6 Controls Main heating 1 Function Ecodesign class Manufacturer Model 5 Hot Neating 2 Function Ecodesign class Manufacturer	ss k insulated •at recovery system 1 - t - type: Time and tempera - type: Not applicable	N/A N/A N/A N/A type: Instant 76.0% Q-Blue B.V QB1-21D	<u>.</u>	and electrical se	ervices

7 Linhting			
7 Lighting	75 100 /14/		
Minimum permitted light source efficacy			01/
Lowest light source efficacy	120 lm/W		OK
External lights control	N/A		
8 Mechanical ventilation			
System type: Balanced whole-house me	echanical ventilation v	vith heat recovery	
Maximum permitted specific fan power	1.5 W/(I/s)		
Specific fan power	0.59 W/(l/s)		OK
Minimum permitted heat recovery	73%		
efficiency			
Heat recovery efficiency	89%		OK
Manufacturer/Model	MRXBOXAB-ECO2		
Commissioning			
• •			
9 Local generation			
Technology type: Photovoltaic system			
Peak power	1.3775 kWp		
Orientation	South		
Pitch	30°		
Overshading	None or very little		
Manufacturer			
MCS certificate			
10 Heat networks			
N/A			
11 Supporting documentary evidence			
N/A			
12 Declarations			
a. Assessor Declaration			
	nfirmation that the co	ntents of this BREL Compliance Report	
		formation submitted for this dwelling for	
the purpose of carrying out the "As de			
evidence (SAP Conventions, Appendi			
documentary evidence required) has l	been reviewed in the	course of preparing this BREL	
Compliance Report.			
Cineradu			
Signed:		Assessor ID:	
News		Data	
Name:		Date:	
h Client Declaration			
b. Client Declaration			