

Our Ref: D2019

5th June 2020

As Built Energy Statement
& SAP Assessment Report (AD L1A 2010)
North Block, Eastbank Phase 2, Manchester

Site Address: North Block
1 Advent Way
Manchester
M4 7LR

Client: Bridgestone Construction Ltd
Hyde Park House
Cartwright Street
Hyde
Cheshire
SK14 4EH

SAP Assessor: Neil Unsworth
Bridgewater Energy
Accreditation ref EES/004187

1.0 Energy Statement

This statement has been prepared by Bridgewater Energy on behalf of Bridgestone Construction Ltd for the North Block of the Eastbank Phase 2 development which comprises 146 apartments.

In particular the statement addresses section 3.5 of the Environmental Standards Statement document produced by Turley Sustainability dated August 2015. This stated that the development would achieve a 15% reduction in carbon emissions over Building Regulations Part L 2010 in compliance with Policy EN6.

2.0 As Built Energy Assessment

An individual as built SAP energy assessment has been carried out on each dwelling within the apartment block using Elmhurst Energy Systems SAP 2009 Calculator which is in compliance with the Building Regulations Approved Document L1A 2010.

The apartments have undergone an as built block compliance assessment in accordance with paragraph 4.14 of AD L1A. Using this method the average DER (Dwelling Emission Rate of CO₂) must be no greater than the average TER (Target Emission Rate) in order to comply with AD L1A 2010.

A summary of the block assessment is given in the table below:

Block	Average DER	Average TER	CO ₂ reduction
North Block (146 no. apartments)	21.52	25.47	15.51%

Copies of the Block Compliance Report and individual SAP Compliance Reports for each apartment are attached to this report.

3.0 Conclusion

It has been shown that the North Block apartments have achieved a 15.51% reduction in carbon emissions over Building Regulations Part L 2010.

Block Compliance

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Property Reference: D2019-P1
Survey Reference: P1 As built

Issued on Date: 05.Jun.2020

Prop Type Ref:

Property: Flat 1, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 83 B **CO2 Emissions (t/year):** 1.34 **DER:** 22.80 Pass **Reduction:** 18.5% **FEE:** 28.5 **ZC8:** 0.00
Environmental: 84 B **General Requirements Compliance:** Pass **TER:** 27.96 **HLP:** 0.74 **Energy cost:** £ 552

CfSH Results **Version:** **ENE1 Credits:** N/A **ENE2 Credits:** N/A **ENE7 Credits:** N/A **CfSH Level:** N/A

Surveyor: Neil Unsworth, Tel: 01942 888092
Address: Chaddock Lane, Astley, Manchester, M29 7JY
Client:

Surveyor ID: 5906-0001

Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

Block Compliance Report

Property-Survey Reference	Multiplier (M)	Floor Area (F)	DER (D)	TER (T)	F x M	D x F x M	T x F x M
D2019-C1-C1 As built	1	47.79	28.57	31.47	47.79	1,365.36	1,503.95
D2019-C2-C2 As built	4	47.79	21.90	26.09	191.16	4,186.40	4,987.36
D2019-C3-C3 As built	1	47.79	23.22	30.11	47.79	1,109.68	1,438.96
D2019-D1-D1 As built	1	46.91	26.74	31.68	46.91	1,254.37	1,486.11
D2019-D2-D2 As built	4	46.91	22.04	26.30	187.64	4,135.59	4,934.93
D2019-D3-D3 As built	1	46.91	25.24	30.32	46.91	1,184.01	1,422.31
D2019-E1-E1 As built	1	67.26	27.84	28.86	67.26	1,872.52	1,941.12
D2019-E2-E2 As built	4	79.66	20.70	21.99	318.64	6,595.85	7,006.89
D2019-E3-E3 As built	1	79.66	24.58	26.05	79.66	1,958.04	2,075.14
D2019-F1-F1 As built	1	60.02	24.79	29.80	60.02	1,487.90	1,788.60
D2019-F2-F2 As built	4	60.02	20.84	24.41	240.08	5,003.27	5,860.35
D2019-F3-F3 As built	1	60.02	24.09	28.45	60.02	1,445.88	1,707.57
D2019-M1-M1 As built	1	67.26	21.43	28.73	67.26	1,441.38	1,932.38
D2019-M2-M2 As built	4	67.26	18.77	23.30	269.04	5,049.88	6,268.63
D2019-M3-M3 As built	1	67.26	22.38	27.36	67.26	1,505.28	1,840.23
D2019-B-B As built	20	49.69	21.21	25.20	993.80	21,078.50	25,043.76
D2019-B1-B1 As built	7	49.69	24.42	29.21	347.83	8,494.01	10,160.11
D2019-N1-N1 As built	3	62.35	23.73	29.27	187.05	4,438.70	5,474.95
D2019-N2-N2 As built	11	62.35	19.44	23.90	685.85	13,332.92	16,391.82
D2019-N3-N3 As built	3	62.35	22.32	27.92	187.05	4,174.96	5,222.44
D2019-O1-O1 As built	1	70.44	23.83	28.56	70.44	1,678.59	2,011.77
D2019-O2-O2 As built	4	70.44	18.97	23.07	281.76	5,344.99	6,500.20
D2019-O3-O3 As built	1	70.44	20.69	27.19	70.44	1,457.40	1,915.26
D2019-G1-G1 As built	1	61.85	26.64	30.08	61.85	1,647.68	1,860.45
D2019-G2-G2 As built	1	61.85	21.39	24.71	61.85	1,322.97	1,528.31
D2019-G2A-G2A As built	3	63.8	21.82	25.19	191.40	4,176.35	4,821.37
D2019-G3-G3 As built	1	63.8	24.74	29.22	63.80	1,578.41	1,864.24
D2019-H1-H1 As built	1	82.74	23.30	28.30	82.74	1,927.84	2,341.54
D2019-H2-H2 As built	1	82.74	18.73	24.21	82.74	1,549.72	2,003.14
D2019-I-I As built	3	78.17	18.69	23.10	234.51	4,382.99	5,417.18
D2019-J-J As built	1	79.25	23.02	28.22	79.25	1,824.34	2,236.44
D2019-K1-K1 As built	1	76.87	20.45	27.08	76.87	1,571.99	2,081.64
D2019-K2-K2 As built	1	76.87	17.28	21.71	76.87	1,328.31	1,668.85
D2019-L1-L1 As built	4	60.8	18.97	24.02	243.20	4,613.50	5,841.66
D2019-L2-L2 As built	1	60.8	21.69	28.02	60.80	1,318.75	1,703.62

PASS

Building Regulation Compliance

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Property Reference: D2019-A 5

Issued on Date: 05.Jun.2020

Survey Reference: A 5 As built

Prop Type Ref:
Property: 5, Advent Way, MANCHESTER, M4 7LD

SAP Rating: 79 C	CO2 Emissions (t/year): 1.93	DER: 25.48 Pass	Reduction: 8.3%	FEE: 40.7	ZC8: 0.00
Environmental: 81 B	General Requirements Compliance: Pass	TER: 27.79		HLP: 0.73	Energy cost: £ 763

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092	Surveyor ID: 5906-0001
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Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	27.79 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.48 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.11 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Not significant	OK
Based On:		

Overshading:	Average
Windows facing North West:	8.70 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Floor U-value	0.13 W/m ² K
Exposed floor U-value	0.13 W/m ² K
Door U-value	1.20 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-A1

Issued on Date: 05.Jun.2020

Survey Reference: A As built

Prop Type Ref:
Property: 3, Advent Way, MANCHESTER, M4 7LD

SAP Rating: 76 C	CO2 Emissions (t/year): 2.24	DER: 29.05 Fail	Reduction: -0.3%	FEE: 45.7	ZC8: 0.00
Environmental: 78 C	General Requirements Compliance: Fail	TER: 28.97		HLP: 0.84	Energy cost: £ 871

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.97 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	29.05 kg/m ²	
Excess emissions	0.08 kg/m ² (0.3%)	Fail

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	8.00 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Not significant	OK
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Based On:

Overshading:

Average

Windows facing North West:

8.70 m², No overhang

Ventilation rate:

3.00

Blinds/curtains:

None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Floor U-value	0.13 W/m ² K
Exposed floor U-value	0.13 W/m ² K
Door U-value	1.20 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-A2

Issued on Date: 05.Jun.2020

Survey Reference: A2 As built

Prop Type Ref:
Property: 15, Advent Way, MANCHESTER, M4 7LD

SAP Rating: 77 C	CO2 Emissions (t/year): 2.17	DER: 28.24 Fail	Reduction: -0.7%	FEE: 44.1	ZC8: 0.00
Environmental: 79 C	General Requirements Compliance: Fail	TER: 28.04		HLP: 0.81	Energy cost: £ 847

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.04 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	28.24 kg/m ²	
Excess emissions	0.20 kg/m ² (0.7%)	Fail

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	8.00 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Not significant	OK
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Based On:

Overshading:

Average

Windows facing North West:

8.70 m², No overhang

Ventilation rate:

3.00

Blinds/curtains:

None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Floor U-value	0.13 W/m ² K
Exposed floor U-value	0.13 W/m ² K
Door U-value	1.20 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-A

Issued on Date: 05.Jun.2020

Survey Reference: A As built

Prop Type Ref:
Property: 7, 9, 11, 13, Advent Way, MANCHESTER, M4 7LD

SAP Rating: 77 C	CO2 Emissions (t/year): 2.16	DER: 28.07 Fail	Reduction: -1.0%	FEE: 43.7	ZC8: 0.00
Environmental: 79 C	General Requirements Compliance: Fail	TER: 27.79		HLP: 0.81	Energy cost: £ 842

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092	Surveyor ID: 5906-0001
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Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	27.79 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	28.07 kg/m ²	
Excess emissions	0.28 kg/m ² (1.0%)	Fail

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	8.11 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Not significant	OK
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Based On:

Overshading:

Average

Windows facing North West:

8.70 m², No overhang

Ventilation rate:

3.00

Blinds/curtains:

None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Floor U-value	0.13 W/m ² K
Exposed floor U-value	0.13 W/m ² K
Door U-value	1.20 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-B 410

Issued on Date: 05.Jun.2020

Survey Reference: B 410 As built

Prop Type Ref:
Property: Flat 410, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 0.89	DER: 19.62 Pass	Reduction: 22.1%	FEE: 18.7	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 25.20		HLP: 0.47	Energy cost: £ 393

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	25.20 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	19.62 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.31 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	5.07 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.05 kWh/day Permitted by DBSCG 1.66	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.49	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North West:	6.73 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-B1

Issued on Date: 05.Jun.2020

Survey Reference: B1 As built

Prop Type Ref:
Property: Flat 507-513, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.04	DER: 24.42 Pass	Reduction: 16.4%	FEE: 29.8	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 29.21		HLP: 0.65	Energy cost: £ 445

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	29.21 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.42 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.31 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.19 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.05 kWh/day Permitted by DBSCG 1.66	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.49	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North West:	6.73 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-B

Issued on Date: 05.Jun.2020

Survey Reference: B As built

Prop Type Ref:
Property: Flat 207-213, 307-313, 407-413, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 0.93	DER: 21.21 Pass	Reduction: 15.8%	FEE: 21.1	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 25.20		HLP: 0.53	Energy cost: £ 407

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	25.20 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	21.21 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.31 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.07 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.05 kWh/day Permitted by DBSCG 1.66	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.49	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North West:	6.73 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-C1

Issued on Date: 05.Jun.2020

Survey Reference: C1 As built

Prop Type Ref:
Property: Flat 6, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 82 B	CO2 Emissions (t/year): 1.16	DER: 28.57 Pass	Reduction: 9.2%	FEE: 36.9	ZC8: 0.00
Environmental: 83 B	General Requirements Compliance: Pass	TER: 31.47		HLP: 0.78	Energy cost: £ 491

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	31.47 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	28.57 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.31 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	8.80 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.05 kWh/day Permitted by DBSCG 1.66	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.49	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	6.73 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-C2

Issued on Date: 05.Jun.2020

Survey Reference: C2 As built

Prop Type Ref:
Property: Flat 113, 220, 320, 420, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 0.92	DER: 21.90 Pass	Reduction: 16.1%	FEE: 23.1	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 26.09		HLP: 0.55	Energy cost: £ 404

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	26.09 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	21.90 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.31 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.07 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.05 kWh/day Permitted by DBSCG 1.66	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.49	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North East:	6.73 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-C3

Issued on Date: 05.Jun.2020

Survey Reference: C3 As built

Prop Type Ref:
Property: Flat 520, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B	CO2 Emissions (t/year): 0.96	DER: 23.22 Pass	Reduction: 22.9%	FEE: 28.3	ZC8: 0.00
Environmental: 86 B	General Requirements Compliance: Pass	TER: 30.11		HLP: 0.61	Energy cost: £ 418

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	30.11 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	23.22 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.31 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	5.19 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.05 kWh/day Permitted by DBSCG 1.66	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.49	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	6.73 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-D1

Issued on Date: 05.Jun.2020

Survey Reference: D1 As built

Prop Type Ref:
Property: Flat 7, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 83 B **CO2 Emissions (t/year):** 1.07 **DER:** 26.74 Pass **Reduction:** 15.6% **FEE:** 34.1 **ZC8:** 0.00
Environmental: 84 B **General Requirements Compliance:** Pass **TER:** 31.68 **HLP:** 0.72 **Energy cost:** £ 458

CfSH Results **Version:** **ENE1 Credits:** N/A **ENE2 Credits:** N/A **ENE7 Credits:** N/A **CfSH Level:** N/A

Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	31.68 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.74 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.31 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.80 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.05 kWh/day Permitted by DBSCG 1.66	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.49	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	6.73 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-D2

Issued on Date: 05.Jun.2020

Survey Reference: D2 As built

Prop Type Ref:
Property: Flat 114, 221, 321, 421, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 0.91	DER: 22.04 Pass	Reduction: 16.2%	FEE: 23.1	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 26.30		HLP: 0.55	Energy cost: £ 400

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	26.30 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	22.04 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.31 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.07 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.05 kWh/day Permitted by DBSCG 1.66	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.49	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North East:	6.73 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-D3

Issued on Date: 05.Jun.2020

Survey Reference: D3 As built

Prop Type Ref:
Property: Flat 521, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.01	DER: 25.24 Pass	Reduction: 16.8%	FEE: 30.9	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 30.32		HLP: 0.67	Energy cost: £ 438

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	30.32 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.24 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.31 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.19 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.05 kWh/day Permitted by DBSCG 1.66	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.49	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	6.73 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-E1

Issued on Date: 05.Jun.2020

Survey Reference: E1 As built

Prop Type Ref:
Property: Flat 5, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 79 C	CO2 Emissions (t/year): 1.60	DER: 27.84 Pass	Reduction: 3.5%	FEE: 37.7	ZC8: 0.00
Environmental: 81 B	General Requirements Compliance: Pass	TER: 28.86		HLP: 0.84	Energy cost: £ 644

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.86 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.84 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	3.09 m ² , No overhang
Windows facing North West:	9.18 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-E2

Issued on Date: 05.Jun.2020

Survey Reference: E2 As built

Prop Type Ref:
Property: Flat 112, 219, 319, 419, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.39	DER: 20.70 Pass	Reduction: 5.9%	FEE: 27.8	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 21.99		HLP: 0.63	Energy cost: £ 571

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	21.99 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	20.70 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.63 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North East:	3.09 m ² , No overhang	
Windows facing North West:	11.48 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-E3

Survey Reference: E3 As built

Issued on Date: 05.Jun.2020

Prop Type Ref:
Property: Flat 519, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 81 B	CO2 Emissions (t/year): 1.66	DER: 24.58 Pass	Reduction: 5.6%	FEE: 34.8	ZC8: 0.00
Environmental: 82 B	General Requirements Compliance: Pass	TER: 26.05		HLP: 0.76	Energy cost: £ 664

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	26.05 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.58 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.38 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	3.09 m ² , No overhang
Windows facing North West:	11.48 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-F1

Issued on Date: 05.Jun.2020

Survey Reference: F1 As built

Prop Type Ref:
Property: Flat 8, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 82 B	CO2 Emissions (t/year): 1.27	DER: 24.79 Pass	Reduction: 16.8%	FEE: 33.2	ZC8: 0.00
Environmental: 84 B	General Requirements Compliance: Pass	TER: 29.80		HLP: 0.73	Energy cost: £ 527

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	29.80 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.79 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.28 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	5.81 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	7.59 m ² , No overhang
Windows facing South East:	1.80 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-F2

Issued on Date: 05.Jun.2020

Survey Reference: F2 As built

Prop Type Ref:
Property: Flat 115, 222, 322, 422, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B	CO2 Emissions (t/year): 1.08	DER: 20.84 Pass	Reduction: 14.6%	FEE: 23.1	ZC8: 0.00
Environmental: 86 B	General Requirements Compliance: Pass	TER: 24.41		HLP: 0.58	Energy cost: £ 463

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	24.41 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	20.84 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.28 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North East:	7.59 m ² , No overhang	
Windows facing South East:	1.80 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-F3

Issued on Date: 05.Jun.2020

Survey Reference: F3 As built

Prop Type Ref:
Property: Flat 522, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 83 B **CO2 Emissions (t/year):** 1.23 **DER:** 24.09 Pass **Reduction:** 15.3% **FEE:** 30.8 **ZC8:** 0.00
Environmental: 84 B **General Requirements Compliance:** Pass **TER:** 28.45 **HLP:** 0.70 **Energy cost:** £ 515

CfSH Results **Version:** **ENE1 Credits:** N/A **ENE2 Credits:** N/A **ENE7 Credits:** N/A **CfSH Level:** N/A

Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.45 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.09 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.09 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	7.59 m ² , No overhang
Windows facing South East:	1.80 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-G1

Issued on Date: 05.Jun.2020

Survey Reference: G1 As built

Prop Type Ref:
Property: Flat 9, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 80 C	CO2 Emissions (t/year): 1.44	DER: 26.64 Pass	Reduction: 11.4%	FEE: 35.0	ZC8: 0.00
Environmental: 82 B	General Requirements Compliance: Pass	TER: 30.08		HLP: 0.94	Energy cost: £ 589

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	30.08 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.64 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	

Windows facing North East:	6.73 m ² , No overhang
Windows facing South East:	8.92 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-G2

Issued on Date: 05.Jun.2020

Survey Reference: G2 As built

Prop Type Ref:
Property: Flat 116, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.17	DER: 21.39 Pass	Reduction: 13.4%	FEE: 25.1	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 24.71		HLP: 0.73	Energy cost: £ 492

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	24.71 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	21.39 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	
Windows facing North East:	6.73 m ² , No overhang	
Windows facing South East:	8.92 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-G2A

Issued on Date: 05.Jun.2020

Survey Reference: G2A As built

Prop Type Ref:
Property: Flat 223, 323, 423, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.22	DER: 21.82 Pass	Reduction: 13.4%	FEE: 26.3	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 25.19		HLP: 0.75	Energy cost: £ 512

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092	Surveyor ID: 5906-0001
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Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	25.19 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	21.82 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	
Windows facing North East:	6.73 m ² , No overhang	
Windows facing South East:	8.92 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-G3

Issued on Date: 05.Jun.2020

Survey Reference: G3 As built

Prop Type Ref:
Property: Flat 523, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 82 B	CO2 Emissions (t/year): 1.38	DER: 24.74 Pass	Reduction: 15.3%	FEE: 32.1	ZC8: 0.00
Environmental: 83 B	General Requirements Compliance: Pass	TER: 29.22		HLP: 0.87	Energy cost: £ 567

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	29.22 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.74 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.09 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	

Windows facing North East:	6.73 m ² , No overhang
Windows facing South East:	8.92 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-H1

Issued on Date: 05.Jun.2020

Survey Reference: H1 As built

Prop Type Ref:
Property: Flat 10, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 81 B	CO2 Emissions (t/year): 1.68	DER: 23.30 Pass	Reduction: 17.7%	FEE: 32.5	ZC8: 0.00
Environmental: 82 B	General Requirements Compliance: Pass	TER: 28.30		HLP: 0.90	Energy cost: £ 674

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.30 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	23.30 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.29 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.57 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing South East:	9.18 m ² , No overhang
Windows facing South West:	8.70 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-H2

Issued on Date: 05.Jun.2020

Survey Reference: H2 As built

Prop Type Ref:
Property: Flat 117, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.36	DER: 18.73 Pass	Reduction: 22.6%	FEE: 23.9	ZC8: 0.00
Environmental: 86 B	General Requirements Compliance: Pass	TER: 24.21		HLP: 0.72	Energy cost: £ 561

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	24.21 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	18.73 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.29 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.45 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	

Windows facing South East:	9.18 m ² , No overhang
Windows facing South West:	8.70 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-I 524

Issued on Date: 05.Jun.2020

Survey Reference: I 524 As built

Prop Type Ref:
Property: Flat 524, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 1.20	DER: 17.15 Pass	Reduction: 25.8%	FEE: 19.8	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 23.10		HLP: 0.64	Energy cost: £ 505

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	23.10 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	17.15 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.26 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	4.45 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	
Windows facing South East:	9.18 m ² , No overhang	
Windows facing South West:	7.91 m ² , No overhang	
Windows facing North West:	1.80 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Air permeability	4.5 m ³ /m ² h
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-I

Issued on Date: 05.Jun.2020

Survey Reference: I As built

Prop Type Ref:
Property: Flat 224, 324, 424, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B	CO2 Emissions (t/year): 1.29	DER: 18.69 Pass	Reduction: 19.1%	FEE: 23.4	ZC8: 0.00
Environmental: 86 B	General Requirements Compliance: Pass	TER: 23.10		HLP: 0.71	Energy cost: £ 537

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092	Surveyor ID: 5906-0001
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Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	23.10 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	18.69 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.26 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.45 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	
Windows facing South East:	9.18 m ² , No overhang	
Windows facing South West:	7.91 m ² , No overhang	
Windows facing North West:	1.80 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-J

Issued on Date: 05.Jun.2020

Survey Reference: J As built

Prop Type Ref:
Property: Flat 610, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 81 B	CO2 Emissions (t/year): 1.60	DER: 23.02 Pass	Reduction: 18.4%	FEE: 31.7	ZC8: 0.00
Environmental: 83 B	General Requirements Compliance: Pass	TER: 28.22		HLP: 0.89	Energy cost: £ 643

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.22 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	23.02 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.26 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.56 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	

Windows facing South East:	9.18 m ² , No overhang
Windows facing South West:	7.91 m ² , No overhang
Windows facing North West:	1.80 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-K1

Issued on Date: 05.Jun.2020

Survey Reference: K1 As built

Prop Type Ref:
Property: Flat 11, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.36	DER: 20.45 Pass	Reduction: 24.5%	FEE: 28.2	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 27.08		HLP: 0.72	Energy cost: £ 560

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	27.08 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	20.45 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	5.57 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing South East:	1.80 m ² , No overhang
Windows facing South West:	9.96 m ² , No overhang
Windows facing North West:	1.80 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-K2

Issued on Date: 05.Jun.2020

Survey Reference: K2 As built

Prop Type Ref:
Property: Flat 118, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 1.18	DER: 17.28 Pass	Reduction: 20.4%	FEE: 17.8	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 21.71		HLP: 0.58	Energy cost: £ 497

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	21.71 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	17.28 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.63 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing South East:	1.80 m ² , No overhang	
Windows facing South West:	9.96 m ² , No overhang	
Windows facing North West:	1.80 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-L1

Issued on Date: 05.Jun.2020

Survey Reference: L1 As built

Prop Type Ref:
Property: Flat 225, 325, 425, 525, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 1.04	DER: 18.97 Pass	Reduction: 21.0%	FEE: 17.5	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 24.02		HLP: 0.60	Energy cost: £ 446

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	24.02 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	18.97 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	
Windows facing South East:	1.80 m ² , No overhang	
Windows facing South West:	7.66 m ² , No overhang	
Windows facing North West:	1.80 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-L2

Issued on Date: 05.Jun.2020

Survey Reference: L2 As built

Prop Type Ref:
Property: Flat 609, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.16	DER: 21.69 Pass	Reduction: 22.6%	FEE: 26.2	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 28.02		HLP: 0.73	Energy cost: £ 488

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.02 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	21.69 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.09 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing South East:	1.80 m ² , No overhang
Windows facing South West:	7.66 m ² , No overhang
Windows facing North West:	1.80 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-M1

Issued on Date: 05.Jun.2020

Survey Reference: M1 As built

Prop Type Ref:
Property: Flat 111, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.25	DER: 21.43 Pass	Reduction: 25.4%	FEE: 27.9	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 28.73		HLP: 0.69	Energy cost: £ 520

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.73 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	21.43 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.32 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	4.85 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	1.62 m ² , No overhang
Windows facing South East:	6.67 m ² , No overhang
Windows facing South West:	1.62 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Air permeability	4.9 m ³ /m ² h
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-M2

Issued on Date: 05.Jun.2020

Survey Reference: M2 As built

Prop Type Ref:
Property: Flat 214, 314, 414, 514, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 1.12	DER: 18.77 Pass	Reduction: 19.4%	FEE: 18.1	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 23.30		HLP: 0.57	Energy cost: £ 475

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	23.30 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	18.77 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.32 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North East:	1.62 m ² , No overhang	
Windows facing South East:	6.67 m ² , No overhang	
Windows facing South West:	1.62 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-M3

Issued on Date: 05.Jun.2020

Survey Reference: M3 As built

Prop Type Ref:
Property: Flat 608, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 83 B	CO2 Emissions (t/year): 1.30	DER: 22.38 Pass	Reduction: 18.2%	FEE: 26.6	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 27.36		HLP: 0.72	Energy cost: £ 538

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	27.36 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	22.38 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.32 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.09 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	1.62 m ² , No overhang
Windows facing South East:	6.67 m ² , No overhang
Windows facing South West:	1.62 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-N1

Issued on Date: 05.Jun.2020

Survey Reference: N1 As built

Prop Type Ref:
Property: Flat 108-110, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 83 B	CO2 Emissions (t/year): 1.28	DER: 23.73 Pass	Reduction: 18.9%	FEE: 30.1	ZC8: 0.00
Environmental: 84 B	General Requirements Compliance: Pass	TER: 29.27		HLP: 0.78	Energy cost: £ 532

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	29.27 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	23.73 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.50 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.85 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing South East:	7.68 m ² , No overhang
Windows facing South West:	1.62 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-N2 415

Issued on Date: 05.Jun.2020

Survey Reference: N2 415 As built

Prop Type Ref:
Property: Flat 415, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 1.03	DER: 18.05 Pass	Reduction: 24.5%	FEE: 16.5	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 23.90		HLP: 0.54	Energy cost: £ 443

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	23.90 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	18.05 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.50 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	4.81 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing South East:	7.68 m ² , No overhang	
Windows facing South West:	1.62 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Air permeability	4.8 m ³ /m ² h
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-N2

Issued on Date: 05.Jun.2020

Survey Reference: N2 As built

Prop Type Ref:
Property: 215-217,315-317,416-417,515-51, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B	CO2 Emissions (t/year): 1.08	DER: 19.44 Pass	Reduction: 18.7%	FEE: 19.6	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 23.90		HLP: 0.60	Energy cost: £ 461

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	23.90 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	19.44 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.50 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing South East:	7.68 m ² , No overhang	
Windows facing South West:	1.62 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-N3

Issued on Date: 05.Jun.2020

Survey Reference: N3 As built

Prop Type Ref:
Property: Flat 605. 606, 607, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.21	DER: 22.32 Pass	Reduction: 20.1%	FEE: 27.0	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 27.92		HLP: 0.73	Energy cost: £ 507

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	27.92 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	22.32 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.50 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.09 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing South East:	7.68 m ² , No overhang
Windows facing South West:	1.62 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-O1

Issued on Date: 05.Jun.2020

Survey Reference: O1 As built

Prop Type Ref:
Property: Flat 107, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 82 B	CO2 Emissions (t/year): 1.43	DER: 23.83 Pass	Reduction: 16.6%	FEE: 33.0	ZC8: 0.00
Environmental: 83 B	General Requirements Compliance: Pass	TER: 28.56		HLP: 0.76	Energy cost: £ 586

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.56 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	23.83 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.50 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.85 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing South East:	7.68 m ² , No overhang
Windows facing North West:	1.62 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-O2

Issued on Date: 05.Jun.2020

Survey Reference: O2 As built

Prop Type Ref:
Property: Flat 218, 318, 418, 518, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B	CO2 Emissions (t/year): 1.17	DER: 18.97 Pass	Reduction: 17.8%	FEE: 22.8	ZC8: 0.00
Environmental: 86 B	General Requirements Compliance: Pass	TER: 23.07		HLP: 0.58	Energy cost: £ 493

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	23.07 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	18.97 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.50 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.63 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing South East:	7.68 m ² , No overhang	
Windows facing North West:	1.62 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-O3

Issued on Date: 05.Jun.2020

Survey Reference: O3 As built

Prop Type Ref:
Property: Flat 604, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.25	DER: 20.69 Pass	Reduction: 23.9%	FEE: 27.5	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 27.19		HLP: 0.65	Energy cost: £ 523

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	27.19 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	20.69 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.50 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	5.38 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing South East:	7.68 m ² , No overhang
Windows facing North West:	1.62 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-P1

Issued on Date: 05.Jun.2020

Survey Reference: P1 As built

Prop Type Ref:
Property: Flat 1, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 83 B	CO2 Emissions (t/year): 1.34	DER: 22.80 Pass	Reduction: 18.5%	FEE: 28.5	ZC8: 0.00
Environmental: 84 B	General Requirements Compliance: Pass	TER: 27.96		HLP: 0.74	Energy cost: £ 552

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	27.96 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	22.80 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.29 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing South East:	9.19 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-P2

Issued on Date: 05.Jun.2020

Survey Reference: P2 As built

Prop Type Ref:
Property: Flat 101, 201, 301, 401, 501, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 1.09	DER: 17.81 Pass	Reduction: 20.9%	FEE: 15.9	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 22.53		HLP: 0.54	Energy cost: £ 466

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	22.53 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	17.81 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.29 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing South East:	9.19 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-P3

Issued on Date: 05.Jun.2020

Survey Reference: P3 As built

Prop Type Ref:
Property: Flat 601, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B	CO2 Emissions (t/year): 1.14	DER: 18.97 Pass	Reduction: 28.7%	FEE: 22.3	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 26.59		HLP: 0.60	Energy cost: £ 483

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	26.59 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	18.97 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.29 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	5.09 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing South East:	9.19 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-Q1

Issued on Date: 05.Jun.2020

Survey Reference: Q1 As built

Prop Type Ref:
Property: Flat 2, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 82 B	CO2 Emissions (t/year): 1.46	DER: 23.52 Pass	Reduction: 17.8%	FEE: 32.2	ZC8: 0.00
Environmental: 83 B	General Requirements Compliance: Pass	TER: 28.61		HLP: 0.78	Energy cost: £ 596

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.61 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	23.52 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.28 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.57 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing South East:	1.80 m ² , No overhang
Windows facing South West:	7.66 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-Q2

Issued on Date: 05.Jun.2020

Survey Reference: Q2 As built

Prop Type Ref:
Property: Flat 202, 302, 402, 502, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B	CO2 Emissions (t/year): 1.19	DER: 18.37 Pass	Reduction: 20.9%	FEE: 20.9	ZC8: 0.00
Environmental: 86 B	General Requirements Compliance: Pass	TER: 23.23		HLP: 0.66	Energy cost: £ 500

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	23.23 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	18.37 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.26 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.63 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	
Windows facing South East:	1.80 m ² , No overhang	
Windows facing South:	4.59 m ² , No overhang	
Windows facing South West:	7.66 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-R
Survey Reference: R As built

Issued on Date: 05.Jun.2020
Prop Type Ref:

Property: Flat 102, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B **CO2 Emissions (t/year):** 1.24 **DER:** 18.34 Pass **Reduction:** 21.3% **FEE:** 21.6 **ZC8:** 0.00
Environmental: 86 B **General Requirements Compliance:** Pass **TER:** 23.30 **HLP:** 0.68 **Energy cost:** £ 519

CfSH Results **Version:** **ENE1 Credits:** N/A **ENE2 Credits:** N/A **ENE7 Credits:** N/A **CfSH Level:** N/A

Surveyor: Neil Unsworth, Tel: 01942 888092 **Surveyor ID:** 5906-0001
Address: Chaddock Lane, Astley, Manchester, M29 7JY
Client:

Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04
SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	23.30 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	18.34 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.26 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.63 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		

Overshading:	Average
Windows facing South East:	1.80 m ² , No overhang
Windows facing South:	5.78 m ² , No overhang
Windows facing South West:	7.66 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Exposed floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-S

Issued on Date: 05.Jun.2020

Survey Reference: S As built

Prop Type Ref:
Property: Flat 602, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.04	DER: 24.07 Pass	Reduction: 21.3%	FEE: 27.5	ZC8: 0.00
Environmental: 85 B	General Requirements Compliance: Pass	TER: 30.58		HLP: 0.75	Energy cost: £ 447

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092	Surveyor ID: 5906-0001
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Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	30.58 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.07 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.29 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.19 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.05 kWh/day Permitted by DBSCG 1.66	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.49	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	1.80 m ² , No overhang
Windows facing South East:	6.90 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-T
Survey Reference: T As built

Issued on Date: 05.Jun.2020
Prop Type Ref:

Property: Flat 103, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B **CO2 Emissions (t/year):** 1.50 **DER:** 18.31 Pass **Reduction:** 19.1% **FEE:** 25.4 **ZC8:** 0.00
Environmental: 86 B **General Requirements Compliance:** Pass **TER:** 22.64 **HLP:** 0.59 **Energy cost:** £ 610

CfSH Results **Version:** **ENE1 Credits:** N/A **ENE2 Credits:** N/A **ENE7 Credits:** N/A **CfSH Level:** N/A

Surveyor: Neil Unsworth, Tel: 01942 888092 **Surveyor ID:** 5906-0001
Address: Chaddock Lane, Astley, Manchester, M29 7JY
Client:

Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04
SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	22.64 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	18.31 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	5.08 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing West:	13.78 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-U1

Issued on Date: 05.Jun.2020

Survey Reference: U1 As built

Prop Type Ref:
Property: Flat 503, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 83 B	CO2 Emissions (t/year): 1.46	DER: 21.42 Pass	Reduction: 12.0%	FEE: 28.0	ZC8: 0.00
Environmental: 84 B	General Requirements Compliance: Pass	TER: 24.35		HLP: 0.82	Energy cost: £ 597

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	24.35 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	21.42 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.38 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.63 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	

Windows facing South:	9.18 m ² , No overhang
Windows facing West:	6.37 m ² , No overhang
Windows facing North West:	4.60 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-U
Survey Reference: U As built

Issued on Date: 05.Jun.2020
Prop Type Ref:

Property: Flat 203, 303, 403, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 83 B **CO2 Emissions (t/year):** 1.43 **DER:** 20.97 Pass **Reduction:** 10.3% **FEE:** 27.1 **ZC8:** 0.00
Environmental: 84 B **General Requirements Compliance:** Pass **TER:** 23.38 **HLP:** 0.80 **Energy cost:** £ 587

CfSH Results **Version:** **ENE1 Credits:** N/A **ENE2 Credits:** N/A **ENE7 Credits:** N/A **CfSH Level:** N/A

Surveyor: Neil Unsworth, Tel: 01942 888092 **Surveyor ID:** 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:

Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	23.38 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	20.97 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.38 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.63 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	
Windows facing South:	9.18 m ² , No overhang	
Windows facing West:	6.37 m ² , No overhang	
Windows facing North West:	4.60 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

Page 1 of 2

Property Reference: D2019-V

Issued on Date: 05.Jun.2020

Survey Reference: V As built

Prop Type Ref:
Property: Flat 603, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 81 B	CO2 Emissions (t/year): 1.70	DER: 22.43 Pass	Reduction: 24.6%	FEE: 32.2	ZC8: 0.00
Environmental: 83 B	General Requirements Compliance: Pass	TER: 29.76		HLP: 0.94	Energy cost: £ 681

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	29.76 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	22.43 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.41 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	5.56 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Medium	OK
Based On:		
Overshading:	Average	

Windows facing North East:	1.99 m ² , No overhang
Windows facing South East:	3.06 m ² , No overhang
Windows facing South:	13.77 m ² , No overhang
Windows facing West:	4.32 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-W

Issued on Date: 05.Jun.2020

Survey Reference: W As built

Prop Type Ref:
Property: Flat 3, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 80 C	CO2 Emissions (t/year): 1.45	DER: 27.70 Pass	Reduction: 7.1%	FEE: 37.9	ZC8: 0.00
Environmental: 82 B	General Requirements Compliance: Pass	TER: 29.82		HLP: 0.81	Energy cost: £ 593

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	29.82 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.70 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.29 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	2.05 m ² , No overhang
Windows facing North West:	7.91 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-X1

Issued on Date: 05.Jun.2020

Survey Reference: X1 As built

Prop Type Ref:
Property: Flat 504, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B	CO2 Emissions (t/year): 1.14	DER: 21.57 Pass	Reduction: 23.3%	FEE: 26.2	ZC8: 0.00
Environmental: 86 B	General Requirements Compliance: Pass	TER: 28.13		HLP: 0.60	Energy cost: £ 482

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	28.13 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	21.57 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.29 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.09 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North East:	2.05 m ² , No overhang	
Windows facing North West:	7.91 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.00 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-X

Issued on Date: 05.Jun.2020

Survey Reference: X As built

Prop Type Ref:
Property: Flat 104, 204, 304, 404, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B	CO2 Emissions (t/year): 1.12	DER: 21.24 Pass	Reduction: 11.8%	FEE: 24.6	ZC8: 0.00
Environmental: 86 B	General Requirements Compliance: Pass	TER: 24.09		HLP: 0.59	Energy cost: £ 477

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	24.09 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	21.24 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.29 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North East:	2.05 m ² , No overhang	
Windows facing North West:	7.91 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m²K
Window U-value	1.23 W/m²K
Party wall U-value	0.00 W/m²K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-Y1

Issued on Date: 05.Jun.2020

Survey Reference: Y1 As built

Prop Type Ref:
Property: Flat 105, 205, 305, 405, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B	CO2 Emissions (t/year): 1.14	DER: 20.86 Pass	Reduction: 12.1%	FEE: 24.1	ZC8: 0.00
Environmental: 86 B	General Requirements Compliance: Pass	TER: 23.73		HLP: 0.57	Energy cost: £ 481

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	23.73 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	20.86 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.28 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North East:	1.80 m ² , No overhang	
Windows facing North West:	7.91 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-Y2

Issued on Date: 05.Jun.2020

Survey Reference: Y2 As built

Prop Type Ref:
Property: Flat 505, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 83 B	CO2 Emissions (t/year): 1.31	DER: 24.24 Pass	Reduction: 12.7%	FEE: 31.9	ZC8: 0.00
Environmental: 84 B	General Requirements Compliance: Pass	TER: 27.78		HLP: 0.70	Energy cost: £ 541

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	27.78 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.24 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.09 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	1.80 m ² , No overhang
Windows facing North West:	7.91 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-Y

Issued on Date: 05.Jun.2020

Survey Reference: Y As built

Prop Type Ref:
Property: Flat 4, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 81 B	CO2 Emissions (t/year): 1.45	DER: 26.88 Pass	Reduction: 7.8%	FEE: 36.6	ZC8: 0.00
Environmental: 82 B	General Requirements Compliance: Pass	TER: 29.14		HLP: 0.78	Energy cost: £ 592

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	29.14 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.88 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.28 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.81 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	1.80 m ² , No overhang
Windows facing North West:	7.91 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-Z1 406

Issued on Date: 05.Jun.2020

Survey Reference: Z1 406 As built

Prop Type Ref:
Property: Flat 406, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 86 B	CO2 Emissions (t/year): 1.18	DER: 17.76 Pass	Reduction: 18.9%	FEE: 22.4	ZC8: 0.00
Environmental: 87 B	General Requirements Compliance: Pass	TER: 21.90		HLP: 0.49	Energy cost: £ 497

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	21.90 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	17.76 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	4.63 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North East:	1.68 m ² , No overhang	
Windows facing North West:	9.89 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Air permeability	4.6 m ³ /m ² h
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-Z1

Issued on Date: 05.Jun.2020

Survey Reference: Z1 As built

Prop Type Ref:
Property: Flat 206, 306, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 85 B	CO2 Emissions (t/year): 1.27	DER: 19.50 Pass	Reduction: 11.0%	FEE: 25.6	ZC8: 0.00
Environmental: 86 B	General Requirements Compliance: Pass	TER: 21.90		HLP: 0.55	Energy cost: £ 529

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	21.90 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	19.50 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	6.63 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	
Windows facing North East:	1.68 m ² , No overhang	
Windows facing North West:	9.89 m ² , No overhang	

Ventilation rate: 3.00
Blinds/curtains: None

10 Key features

External wall U-value	0.17 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-Z2

Issued on Date: 05.Jun.2020

Survey Reference: Z2 As built

Prop Type Ref:
Property: Flat 506, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 82 B	CO2 Emissions (t/year): 1.51	DER: 23.35 Pass	Reduction: 9.9%	FEE: 32.9	ZC8: 0.00
Environmental: 83 B	General Requirements Compliance: Pass	TER: 25.93		HLP: 0.69	Energy cost: £ 613

CfSH Results	Version:	ENE1 Credits: N/A	ENE2 Credits: N/A	ENE7 Credits: N/A	CfSH Level: N/A
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Surveyor: Neil Unsworth, Tel: 01942 888092

Surveyor ID: 5906-0001

Address: Chaddock Lane, Astley, Manchester, M29 7JY

Client:
Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04

SAP version: SAP 2009, Regs Region: England and Wales (Part L1A 2010), Calculation Type: New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	25.93 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	23.35 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	7.38 (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	1.68 m ² , No overhang
Windows facing North West:	9.89 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Roof U-value	0.11 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Photovoltaic array	

Building Regulation Compliance

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Property Reference: D2019-Z
Survey Reference: Z As built

Issued on Date: 05.Jun.2020
Prop Type Ref:

Property: Flat 106, 1, Advent Way, MANCHESTER, M4 7LR

SAP Rating: 84 B **CO2 Emissions (t/year):** 1.31 **DER:** 20.15 Pass **Reduction:** 17.9% **FEE:** 28.4 **ZC8:** 0.00
Environmental: 86 B **General Requirements Compliance:** Pass **TER:** 24.55 **HLP:** 0.58 **Energy cost:** £ 542

CfSH Results **Version:** **ENE1 Credits:** N/A **ENE2 Credits:** N/A **ENE7 Credits:** N/A **CfSH Level:** N/A

Surveyor: Neil Unsworth, Tel: 01942 888092 **Surveyor ID:** 5906-0001
Address: Chaddock Lane, Astley, Manchester, M29 7JY
Client:

Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04
SAP version: SAP 2009, **Regs Region:** England and Wales (Part L1A 2010), **Calculation Type:** New Dwelling As Built

SUMMARY FOR INPUT DATA FOR New Build (As Built)

1 TER and DER

Fuel for main heating:	Electricity	
Fuel factor:	1.47 (electricity)	
Target Carbon Dioxide Emission Rate (TER)	24.55 kg/m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	20.15 kg/m ²	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.13 (max. 0.25)	0.13 (max. 0.70)	OK
Openings	1.27 (max. 2.00)	1.50 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals:	4.78 (measured in this dwelling)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Other system - Electric REA Panel, convector or radiant heaters
Secondary heating system:	None

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.23 kWh/day Permitted by DBSCG 1.89	OK
Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls:	Programmer and appliance thermostats	OK
Hot water controls:	Cylinderstat	OK

7 Low energy lights

Percentage of fixed lights with low-energy fittings:	100%	
Minimum	75%	OK

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.50	
Maximum	1.5	OK
MVHR efficiency:	90%	
Minimum:	70%	OK

9 Summertime temperature

Overheating risk (West Pennines):	Slight	OK
Based On:		
Overshading:	Average	

Windows facing North East:	1.68 m ² , No overhang
Windows facing North West:	9.89 m ² , No overhang
Ventilation rate:	3.00
Blinds/curtains:	None

10 Key features

External wall U-value	0.17 W/m ² K
Floor U-value	0.13 W/m ² K
Window U-value	1.23 W/m ² K
Party wall U-value	0.00 W/m ² K
Air permeability	4.8 m ³ /m ² h
Photovoltaic array	