Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	3.47m²
Windows facing: South	5.19m²
Ventilation rate:	1.90
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.05 W/m²K
Photovoltaic array	

SAP Input

Property Details: F00 06 - Level 0

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 16.02
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	51.4 m²	3.75 m

Living area:	29.8 m² (fraction 0.58)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04d	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W04d	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	South	1.36	2.55
W04d		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	28.125	8.66	19.46	0.18	0	False	0
Floor	51.4			0.05			0
Internal Elements							
Int	91.5						9
Party Elements							
P. Wall	85.5						0
P. Ceiling	51.4						0

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.1073

Length	Psi-value		
3.395	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.021	E3	Sill
10.2	0.016	E4	Jamb
4.1	0.14	E7	Party floor between dwellings (in blocks of flats)
4.1	0.32	E20	Exposed floor (normal)
7.5	0.12	E18	Party wall between dwellings
22.8	0	P3	Intermediate floor between dwellings (in blocks of flats)
22.8	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 1
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 3

Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 145 litres
Cylinder insulation: Measured loss, 1.18kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

Conservatory: No conservatory

Low energy lights: 100%

Terrain type: Dense urban

EPC language: English

Wind turbine: No

Passivhaus / Low Carbon Home: No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F00 06 - Level 0

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 16.02
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	1.9 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	120.85	**(P1)**
Transmission heat loss coefficient:	25.3	
Summer heat loss coefficient:	146.17	**(P2)**

Overhangs:

Orientation:	Ratio:	Z_overhangs:
South (W02b)	0	1
South (W04d)	0	1

Solar shading:

Orientation:	Z blinds:	Solar access:	Overhangs:	Z summer:	
South (W02b)	0.85	0.9	1	0.76	**(P8)**
South (W04d)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		Area	Flux	g_	FF	Shading	Gains	
South (W02b)	0.9 x	3.47	112.21	0.38	0.8	0.76	81.49	
South (W04d)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	203.38	**(P3/P4)**

Internal gains:

	June	July	August	
Internal gains	332.45	319.64	326	
Total summer gains	543.27	523.02	526.66	**(P5)**
Summer gain/loss ratio	3.72	3.58	3.6	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.6	23.37	23.29	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:29

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 53.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F00 07 - Level 0
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.91 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	32.01 kg/m²	**Fail**

Excess emissions = 2.1 kg/m² (7 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	52.9 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	51.3 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.10 (max. 0.25)	0.10 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	3.47m²
Windows facing: South	5.19m²
Ventilation rate:	1.50
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.1 W/m²K
Floors U-value	0.05 W/m²K
Photovoltaic array	

SAP Input

Property Details: F00 07 - Level 0

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 263.78
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	53.4 m²	3.75 m

Living area:	30.6 m² (fraction 0.573)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04d	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W04d	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	South	1.36	2.55
W04d		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	31.125	8.66	22.46	0.18	0	False	14
Floor	50			0.1			110
Floor	3.4			0.05			110
Internal Elements							
Int	90						9
Party Elements							
P. Wall	87.375						20
P. Ceiling	53.4						100

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.1509			
	Length	**Psi-value**		
	3.395	0.013	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.016	E4	Jamb
4.9	0.14	E7	Party floor between dwellings (in blocks of flats)
4.9	0.32	E20	Exposed floor (normal)
3.75	0.12	E18	Party wall between dwellings
3.75	0.12	E25	Staggered party wall between dwellings
3.395	0.021	E3	Sill
23.3	0.16	P1	Ground floor
23.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP Input

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F00 07 - Level 0

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 263.78
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	1.5 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	99.12	**(P1)**
Transmission heat loss coefficient:	32.7	
Summer heat loss coefficient:	131.79	**(P2)**

Overhangs:

Orientation:	Ratio:	Z_overhangs:
South (W02b)	0	1
South (W04d)	0	1

Solar shading:

Orientation:	Z blinds:	Solar access:	Overhangs:	Z summer:	
South (W02b)	0.85	0.9	1	0.76	**(P8)**
South (W04d)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		Area	Flux	g_	FF	Shading	Gains	
South (W02b)	0.9 x	3.47	112.21	0.38	0.8	0.76	81.49	
South (W04d)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	203.38	**(P3/P4)**

Internal gains:

	June	July	August	
Internal gains	341.32	328.14	334.66	
Total summer gains	552.14	531.52	535.32	**(P5)**
Summer gain/loss ratio	4.19	4.03	4.06	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.15	0.15	0.15	
Threshold temperature	20.34	22.09	22.02	**(P7)**
Likelihood of high internal temperature	**Not significant**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:29

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 114.44m²
Site Reference : Station Hill - Block F **Plot Reference:** F00 10 - Level 0 Duplex
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.37 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	29.38 kg/m²	**Fail**

Excess emissions = 3.01 kg/m² (11.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	60.7 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	48.0 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.10 (max. 0.25)	0.10 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.29 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system: Electric underfloor heating - electric
In screed above insulation

Secondary heating system: None

5 Cylinder insulation

Hot water Storage: Measured cylinder loss: 1.61 kWh/day
Permitted by DBSCG: 2.56 kWh/day **OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.68	
Maximum	1.5	**OK**
MVHR efficiency:	88%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Windows facing: West	16.81m²
Windows facing: East	1.57m²
Ventilation rate:	2.00
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.1 W/m²K
Photovoltaic array	

SAP Input

Property Details: F00 10 - Level 0 Duplex

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.25
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	57.34 m²	4 m
Floor 1	57.1 m²	2.75 m

Living area:	34.5 m² (fraction 0.301)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
ED-02	Manufacturer	Solid			Metal
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
CW22	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W01b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
ED-02	mm	0.8	0.42	1.2	2.23	1
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1
CW22	16mm or more	0.8	0.38	1.3	16.81	1
W01b	16mm or more	0.8	0.38	1.3	1.57	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
ED-02		Ext	East	1.015	2.2
W03a		Ext 1	West	1.585	2.55
W5c		Ext 1	West	2.3725	2.55
CW22		Ext	West	4.735	3.55
W01b		Ext	East	0.91	1.725

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	59.2	20.61	38.59	0.18	0	False	0
Commercial	28.8	0	28.8	0.18	0.43	False	0
Ext 1	38.775	10.09	28.69	0.18	0	False	0

SAP Input

Floor	57.34	0.1	0
Internal Elements			
Int	257.55		9
Party Elements			
P. Wall	41.6		0
P. Wall 1	60.6		0
P. Ceiling	57.34		0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0872

Length	Psi-value		
10.6175	0.013	E2	Other lintels (including other steel lintels)
9.6025	0.021	E3	Sill
25.15	0.016	E4	Jamb
39.6	0.14	E7	Party floor between dwellings (in blocks of flats)
11.4	0.32	E20	Exposed floor (normal)
6.75	0.18	E16	Corner (normal)
20.25	0.12	E18	Party wall between dwellings
6.75	0.12	E25	Staggered party wall between dwellings
10.4	0.16	P1	Ground floor
47.2	0	P3	Intermediate floor between dwellings (in blocks of flats)

Ventilation:

DRAFT

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 3
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 2
Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 250 litres
Cylinder insulation: Measured loss, 1.61kWh/day
Primary pipework insulation: False

SAP Input

Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F00 10 - Level 0 Duplex

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	2
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.25
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	255.01	**(P1)**
Transmission heat loss coefficient:	76.6	
Summer heat loss coefficient:	331.58	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1
West (CW22)	0	1
East (W01b)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**
West (CW22)	0.85	0.9	1	0.76	**(P8)**
East (W01b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
West (CW22)	0.9 x	16.81	117.51	0.38	0.8	0.76	413.44	
East (W01b)	0.9 x	1.57	117.51	0.38	0.8	0.76	38.61	
						Total	700.21	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	543.57	521.84	531.06	
Total summer gains	1286.86	1222.05	1147.08	**(P5)**
Summer gain/loss ratio	3.88	3.69	3.46	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.74	23.44	23.12	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

SAP 2012 Overheating Assessment

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:29

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 117.6m²
Site Reference : Station Hill - Block F **Plot Reference:** F00 11 - Level 0 Duplex
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.99 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.19 kg/m²	**Fail**

Excess emissions = 2.2 kg/m² (9.2 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	53.7 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	42.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.10 (max. 0.25)	0.10 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.61 kWh/day	
	Permitted by DBSCG: 2.56 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.68	
Maximum	1.5	**OK**
MVHR efficiency:	88%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	8.08m²
Windows facing: East	3.14m²
Windows facing: East	3.14m²
Windows facing: East	15.18m²
Ventilation rate:	2.10
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.1 W/m²K
Photovoltaic array	

SAP Input

Property Details: F00 11 - Level 0 Duplex

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 23.41
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	58.7 m²	4 m
Floor 1	58.9 m²	2.75 m

Living area:	35.8 m² (fraction 0.304)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W01b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W01b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
CW23	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W01b	16mm or more	0.8	0.38	1.3	1.57	2
W01b	16mm or more	0.8	0.38	1.3	1.57	2
CW23	16mm or more	0.8	0.38	1.3	15.18	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext 1	West	1.585	2.55
W01b		Ext	East	0.91	1.725
W01b		Ext 1	East	0.91	1.725
CW23		Ext	East	4.275	3.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50	18.32	31.68	0.18	0	False	14
Ext 1	36.3	11.22	25.08	0.18	0	False	14
Floor	58.9			0.1			0
Internal Elements							
Int	217.6						9
Party Elements							
P. Wall	83.2						0
P. Wall 1	57.2						0

SAP Input

P. Ceiling	58.9	0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0707

Length	Psi-value		
11.085	0.013	E2	Other lintels (including other steel lintels)
11.085	0.021	E3	Sill
31.1	0.016	E4	Jamb
28.6	0.14	E7	Party floor between dwellings (in blocks of flats)
1.5	0.32	E20	Exposed floor (normal)
27	0.12	E18	Party wall between dwellings
31.2	0	P3	Intermediate floor between dwellings (in blocks of flats)
10.4	0.16	P1	Ground floor

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 3
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 2
Pressure test: 3

DRAFT

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 250 litres
Cylinder insulation: Measured loss, 1.61kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff
In Smoke Control Area: Unknown

SAP Input

Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F00 11 - Level 0 Duplex

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	2
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 23.41
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.1 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	274.97	**(P1)**
Transmission heat loss coefficient:	62.9	
Summer heat loss coefficient:	337.84	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
East (W01b)	0	1
East (W01b)	0	1
East (CW23)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
East (W01b)	0.85	0.9	1	0.76	**(P8)**
East (W01b)	0.85	0.9	1	0.76	**(P8)**
East (CW23)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	8.08	117.51	0.38	0.8	0.76	198.73	
East (W01b)	0.9 x	3.14	117.51	0.38	0.8	0.76	77.23	
East (W01b)	0.9 x	3.14	117.51	0.38	0.8	0.76	77.23	
East (CW23)	0.9 x	15.18	117.51	0.38	0.8	0.76	373.35	
						Total	726.53	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	549.5	527.51	536.79	
Total summer gains	1320.73	1254.04	1175.96	**(P5)**
Summer gain/loss ratio	3.91	3.71	3.48	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.84	1.84	1.84	
Threshold temperature	21.75	23.45	23.12	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

SAP 2012 Overheating Assessment

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:29

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 107.84m²
Site Reference : Station Hill - Block F **Plot Reference:** F00 12 - Level 0 Duplex
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	28.89 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	34.22 kg/m²	**Fail**

Excess emissions = 5.33 kg/m² (18.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	67.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	56.1 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.10 (max. 0.25)	0.10 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.61 kWh/day	
	Permitted by DBSCG: 2.56 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.68	
Maximum	1.5	**OK**
MVHR efficiency:	88%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	4.04m²
Windows facing: East	1.57m²
Windows facing: West	6.05m²
Windows facing: West	16.87m²
Windows facing: East	3.47m²
Windows facing: East	1.57m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.1 W/m²K
Photovoltaic array	

SAP Input

Property Details: F00 12 - Level 0 Duplex

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 22.06
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	53.97 m²	4 m
Floor 1	53.87 m²	2.75 m

Living area:	42.5 m² (fraction 0.394)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W01b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
CW24	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
CW29a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W01b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W01b	16mm or more	0.8	0.38	1.3	1.57	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1
CW24	16mm or more	0.8	0.38	1.3	16.87	1
CW29a	16mm or more	0.8	0.38	1.3	3.47	1
W01b	16mm or more	0.8	0.38	1.3	1.57	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext 1	East	1.585	2.55
W01b		Ext	East	0.91	1.725
W5c		Ext 1	West	2.3725	2.55
CW24		Ext	West	4.752	3.55
CW29a		Ext	East	1.36	2.55
W01b		Ext 1	East	0.91	1.725

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	88.4	21.91	66.49	0.18	0	False	0
Ext 1	61.05	11.66	49.39	0.18	0	False	0

SAP Input

Floor	53.97	0.1	0
Internal Elements			
Int	264.35		9
Party Elements			
P. Wall	42.4		0
P. Wall 1	28.6		0
P. Ceiling	53.97		0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1232

Length	Psi-value		
11.8895	0.013	E2	Other lintels (including other steel lintels)
11.8895	0.021	E3	Sill
29.3	0.016	E4	Jamb
54.6	0.14	E7	Party floor between dwellings (in blocks of flats)
10.2	0.32	E20	Exposed floor (normal)
13.5	0.12	E18	Party wall between dwellings
13.5	0.18	E16	Corner (normal)
31.4	0.24	P4	Roof (insulation at ceiling level)
10.6	0.16	P1	Ground floor

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 3
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 1
Pressure test: 3

DRAFT

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 250 litres
Cylinder insulation: Measured loss, 1.61kWh/day
Primary pipework insulation: False
Cylinderstat: True

SAP Input

Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assess as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F00 12 - Level 0 Duplex

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	2
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 22.06
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	264.28	**(P1)**
Transmission heat loss coefficient:	92.8	
Summer heat loss coefficient:	357.08	**(P2)**

Overhangs:

Orientation:	Ratio:	Z_overhangs:
East (W03a)	0	1
East (W01b)	0	1
West (W5c)	0	1
West (CW24)	0	1
East (CW29a)	0	1
East (W01b)	0	1

DRAFT

Solar shading:

Orientation:	Z blinds:	Solar access:	Overhangs:	Z summer:	
East (W03a)	0.85	0.9	1	0.76	**(P8)**
East (W01b)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**
West (CW24)	0.85	0.9	1	0.76	**(P8)**
East (CW29a)	0.85	0.9	1	0.76	**(P8)**
East (W01b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		Area	Flux	g_	FF	Shading	Gains	
East (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
East (W01b)	0.9 x	1.57	117.51	0.38	0.8	0.76	38.61	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
West (CW24)	0.9 x	16.87	117.51	0.38	0.8	0.76	414.91	
East (CW29a)	0.9 x	3.47	117.51	0.38	0.8	0.76	85.34	
East (W01b)	0.9 x	1.57	117.51	0.38	0.8	0.76	38.61	
						Total	825.64	**(P3/P4)**

Internal gains:

	June	July	August	
Internal gains	530.3	509.18	518.26	
Total summer gains	1406.75	1334.83	1244.63	**(P5)**

SAP 2012 Overheating Assessment

Summer gain/loss ratio	3.94	3.74	3.49	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.85	1.85	1.85	
Threshold temperature	21.79	23.48	23.13	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:29

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 58.5m²
Site Reference : Station Hill - Block F **Plot Reference:** F00 14 - Level 0
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.14 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	32.40 kg/m²	**Fail**

Excess emissions = 3.26 kg/m² (11.2 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	53.3 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	42.7 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.10 (max. 0.25)	0.10 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system: Electric underfloor heating - electric
In screed above insulation

Secondary heating system: None

5 Cylinder insulation

Hot water Storage: Measured cylinder loss: 1.18 kWh/day
Permitted by DBSCG: 1.85 kWh/day **OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	3.47m²
Windows facing: East	6.05m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.1 W/m²K
Photovoltaic array	

SAP Input

Property Details: F00 14 - Level 0

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 16.5
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	58.5 m²	2.75 m

Living area:	33.2 m² (fraction 0.568)
Front of dwelling faces:	West

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	East	1.36	2.55
W05c		Ext	East	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.05	9.52	40.53	0.18	0	False	0
Floor	58.5			0.1			0
Internal Elements							
Int	107.25						9
Party Elements							
P. Wall	44.275						0
P. Ceiling	58.5						0

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.1142

Length	Psi-value		
3.7325	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.7325	0.021	E3	Sill
10.2	0.016	E4	Jamb
14.5	0.14	E7	Party floor between dwellings (in blocks of flats)
14.5	0.32	E20	Exposed floor (normal)
7.5	0.12	E25	Staggered party wall between dwellings
3.75	0.18	E16	Corner (normal)
16.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
16.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP Input

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F00 14 - Level 0

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	West
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 16.5
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	122.1	**(P1)**
Transmission heat loss coefficient:	37.3	
Summer heat loss coefficient:	159.41	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02b)	0	1
East (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02b)	0.85	0.9	1	0.76	**(P8)**
East (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02b)	0.9 x	3.47	117.51	0.38	0.8	0.76	85.34	
East (W05c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	234.14	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	363.57	349.43	356.3	
Total summer gains	612.12	583.57	562.29	**(P5)**
Summer gain/loss ratio	3.84	3.66	3.53	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.72	23.45	23.21	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:29

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 138.9m²
Site Reference : Station Hill - Block F **Plot Reference:** F00 15 - Level 0 Duplex
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.05 kg/m²	**Fail**

Excess emissions = 2.05 kg/m² (8.5 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	56.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	43.9 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.10 (max. 0.25)	0.10 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.61 kWh/day	
	Permitted by DBSCG: 2.56 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.68	
Maximum	1.5	**OK**
MVHR efficiency:	88%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	4.04m²
Windows facing: West	6.05m²
Windows facing: East	2.55m²
Windows facing: West	4.58m²
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	1.70
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.1 W/m²K
Photovoltaic array	

SAP Input

Property Details: F00 15 - Level 0 Duplex

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 18.71
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	69.2 m²	4 m
Floor 1	69.7 m²	2.75 m

Living area:	44.5 m² (fraction 0.32)
Front of dwelling faces:	East

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
CW29c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
CW24	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
CW23	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1
CW29c	16mm or more	0.8	0.38	1.3	2.55	1
CW24	16mm or more	0.8	0.38	1.3	4.58	1
W03a	16mm or more	0.8	0.38	1.3	4.04	1
CW23	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext 1	East	1.585	2.55
W5c		Ext 1	West	2.3725	2.55
CW29c		Ext	East	1	2.55
CW24		Ext	West	1.7975	2.55
W03a		Ext 1	West	1.585	2.55
CW23		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	59.2	13.18	46.02	0.18	0	False	0
Ext 1	40.7	14.13	26.57	0.18	0	False	0

SAP Input

Floor	69.7	0.1	0
Internal Elements			
Int	288.75		9
Party Elements			
P. Wall	83.2		0
P. Wall 1	57.2		0
P. Ceiling	69.7		0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1342

Length	Psi-value		
10.7125	0.013	E2	Other lintels (including other steel lintels)
10.7125	0.021	E3	Sill
30.6	0.016	E4	Jamb
44.4	0.14	E7	Party floor between dwellings (in blocks of flats)
14.8	0.32	E20	Exposed floor (normal)
15	0.12	E18	Party wall between dwellings
31.2	0.24	P4	Roof (insulation at ceiling level)
10.4	0.16	P1	Ground floor

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 3
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 2
Pressure test: 3

DRAFT

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 250 litres
Cylinder insulation: Measured loss, 1.61kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True

SAP Input

	Immersion: Single
	Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F00 15 - Level 0 Duplex

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	2
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 18.71
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	1.7 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	262.81	**(P1)**
Transmission heat loss coefficient:	76.5	
Summer heat loss coefficient:	339.36	**(P2)**

Overhangs:

Orientation:	Ratio:	Z_overhangs:
East (W03a)	0	1
West (W5c)	0	1
East (CW29c)	0	1
West (CW24)	0	1
West (W03a)	0	1
West (CW23)	0	1

DRAFT

Solar shading:

Orientation:	Z blinds:	Solar access:	Overhangs:	Z summer:	
East (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**
East (CW29c)	0.85	0.9	1	0.76	**(P8)**
West (CW24)	0.85	0.9	1	0.76	**(P8)**
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (CW23)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		Area	Flux	g_	FF	Shading	Gains	
East (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
East (CW29c)	0.9 x	2.55	117.51	0.38	0.8	0.76	62.72	
West (CW24)	0.9 x	4.58	117.51	0.38	0.8	0.76	112.64	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (CW23)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	671.68	**(P3/P4)**

Internal gains:

	June	July	August	
Internal gains	584.75	561.12	570.74	
Total summer gains	1297.75	1232.8	1161.66	**(P5)**

SAP 2012 Overheating Assessment

Summer gain/loss ratio	3.82	3.63	3.42	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.87	1.87	1.87	
Threshold temperature	21.69	23.4	23.09	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:29

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 50.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F01 01 - Level 1
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	27.49 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	31.63 kg/m²	**Fail**

Excess emissions = 4.14 kg/m² (15.1 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	45.2 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	41.1 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.05 (max. 0.25)	0.05 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	12.1m²
Ventilation rate:	3.60
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.05 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 01 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 15.08
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	50.4 m²	2.75 m

Living area:	27.5 m² (fraction 0.546)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W05c	16mm or more	0.8	0.38	1.3	6.05	2

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W05c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.425	16.14	2.28	0.18	0	False	0
Floor	50.4			0.05			0
Internal Elements							
Int	84.425						9
Party Elements							
P. Wall	64.35						0
P. Ceiling	50.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.12

Length	Psi-value		
6.33	0.067	E2	Other lintels (including other steel lintels)

SAP Input

6.33	0.03	E3	Sill
15.3	0.045	E4	Jamb
0.4	0.14	E7	Party floor between dwellings (in blocks of flats)
0.4	0.32	E20	Exposed floor (normal)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
23.4	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.4	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP Input

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 01 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 15.08
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	164.66	**(P1)**
Transmission heat loss coefficient:	31.1	
Summer heat loss coefficient:	195.79	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W05c)	0.9 x	12.1	117.51	0.38	0.8	0.76	297.6	
						Total	396.96	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	327.9	315.28	321.52	
Total summer gains	749.28	712.23	670.75	**(P5)**
Summer gain/loss ratio	3.83	3.64	3.43	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.72	23.43	23.12	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:28

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 80m²
Site Reference : Station Hill - Block F **Plot Reference:** F01 02 - Level 1
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	27.42 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	28.77 kg/m²	**Fail**

Excess emissions = 1.35 kg/m² (4.9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	55.7 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	46.1 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.05 (max. 0.25)	0.05 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	4.04m²
Windows facing: West	10.38m²
Windows facing: North	5.19m²
Ventilation rate:	1.60
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.05 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 02 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 247.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	80 m²	2.75 m

Living area:	36.7 m² (fraction 0.459)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04a	16mm or more	0.8	0.38	1.3	5.19	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04a		Ext	West	2.035	2.55
W04c		Ext	North	2.035	2.55

Overshading: Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	59.4	19.61	39.79	0.18	0	False	14
Floor	80			0.05			110
Internal Elements							
Int	165.275						9
Party Elements							
P. Wall	48.675						20
P. Ceiling	80						100

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0966

Length	Psi-value		
7.69	0.067	E2	Other lintels (including other steel lintels)
20.4	0.045	E4	Jamb
13.91	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
7.69	0.03	E3	Sill
13.91	0.32	E20	Exposed floor (normal)
17.7	0	P3	Intermediate floor between dwellings (in blocks of flats)
17.7	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)
Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True
Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 2
Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff
In Smoke Control Area: Unknown
Conservatory: No conservatory
Low energy lights: 100%
Terrain type: Dense urban
EPC language: English

SAP Input

Wind turbine:	No
Passivhaus Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 02 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 247.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	1.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	116.16	**(P1)**
Transmission heat loss coefficient:	48.9	
Summer heat loss coefficient:	165.02	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
West (W04a)	0	1
North (W04c)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04a)	0.85	0.9	1	0.76	**(P8)**
North (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	4.04	81.19	0.38	0.8	0.76	68.65	
West (W04a)	0.9 x	10.38	117.51	0.38	0.8	0.76	255.29	
North (W04c)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	412.13	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	447.35	429.56	437.64	
Total summer gains	888.03	841.69	789.77	**(P5)**
Summer gain/loss ratio	5.38	5.1	4.79	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.27	0.27	0.27	
Threshold temperature	21.65	23.27	22.85	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:28

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 67.9m²
Site Reference : Station Hill - Block F **Plot Reference:** F01 03 - Level 1
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.51 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.62 kg/m²	**Fail**

Excess emissions = 2.11 kg/m² (8.6 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	41.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	34.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.05 (max. 0.25)	0.05 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.05 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 03 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 19.31
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	67.9 m²	2.75 m

Living area:	27.5 m² (fraction 0.546)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04c		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	31.075	13.27	17.81	0.18	0	False	0
Floor	20.11			0.05			0
Internal Elements							
Int	145.698						9
Party Elements							
P. Wall	68.75						0
P. Ceiling	67.9						0
Floor	47.79						0

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.1868

Length	Psi-value		
5.205	0.067	E2	Other lintels (including other steel lintels)

SAP Input

5.205	0.03	E3	Sill
15.3	0.045	E4	Jamb
12.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
25	0	P3	Intermediate floor between dwellings (in blocks of flats)
25	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 03 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 19.31
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	141.72	**(P1)**
Transmission heat loss coefficient:	30.2	
Summer heat loss coefficient:	171.89	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04c)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	402.83	386.99	394.4	
Total summer gains	646.78	612.47	577.74	**(P5)**
Summer gain/loss ratio	3.76	3.56	3.36	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.63	23.33	23.03	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:28

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 68.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F01 04 - Level 1
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.68 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.93 kg/m²	**Fail**

Excess emissions = 2.25 kg/m² (9.5 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	39.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	6.05m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 04 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 21.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	68.4 m²	2.75 m

Living area:	28.9 m² (fraction 0.423)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	29.15	14.13	15.02	0.18	0	False	0
Internal Elements							
Int	165.128						9
Party Elements							
P. Wall	69.025						0
P. Ceiling	68.4						0
Floor	68.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2931

Length	Psi-value		
5.5425	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.5425	0.021	E3	Sill
15.3	0.016	E4	Jamb
10.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
25.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
25.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Low Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 04 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 21.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	142.77	**(P1)**
Transmission heat loss coefficient:	28.7	
Summer heat loss coefficient:	171.48	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W05c)	0.9 x	6.05	81.19	0.38	0.8	0.76	102.8	
						Total	240.1	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	404.82	388.88	396.33	
Total summer gains	664.58	628.98	591.55	**(P5)**
Summer gain/loss ratio	3.88	3.67	3.45	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.85	1.85	1.85	
Threshold temperature	21.72	23.42	23.1	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:28

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 38.8m²
Site Reference : Station Hill - Block F **Plot Reference:** F01 05 - Level 1
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	30.15 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	30.63 kg/m²	**Fail**

Excess emissions = 0.48 kg/m² (1.6 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	43.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	40.5 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	4.04m²
Windows facing: North	6.05m²
Ventilation rate:	2.60
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 05 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 229.03
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	38.8 m²	2.75 m

Living area:	31.4 m² (fraction 0.809)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.05	10.09	6.96	0.18	0	False	14
Internal Elements							
Int	76.5						9
Party Elements							
P. Wall	55.825						20
P. Ceiling	38.8						100
Floor	38.8						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3781

Length	Psi-value		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.016	E4	Jamb
4.4	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
3.9575	0.021	E3	Sill
20.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
20.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery
	Number of wet rooms: Kitchen + 1
	Ductwork: Insulation, rigid
	Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating
	Standard tariff
	Fuel: Electricity
	Info Source: SAP Tables
	SAP Table: 424
	In screed above insulation
	Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control
	Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak)
	Water code: 903
	Fuel :Electricity
	Hot water cylinder
	Cylinder volume: 145 litres
	Cylinder insulation: Measured loss, 1.18kWh/day
	Primary pipework insulation: False
	Cylinderstat: True
	Cylinder in heated space: True
	Immersion: Single
	Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 05 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 229.03
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	91.55	**(P1)**
Transmission heat loss coefficient:	20.2	
Summer heat loss coefficient:	111.72	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	4.04	81.19	0.38	0.8	0.76	68.65	
North (W05c)	0.9 x	6.05	81.19	0.38	0.8	0.76	102.8	
						Total	171.45	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	277.8	267.34	272.8	
Total summer gains	463.29	438.79	412.2	**(P5)**
Summer gain/loss ratio	4.15	3.93	3.69	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.4	0.4	0.4	
Threshold temperature	20.54	22.22	21.89	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:28

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 74.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F01 06 - Level 1
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.77 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.99 kg/m²	**Fail**

Excess emissions = 2.22 kg/m² (9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	44.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	36.5 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	6.84m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 06 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.32
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	74.4 m²	2.75 m

Living area:	30.9 m² (fraction 0.415)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W05c	16mm or more	0.8	0.38	1.3	6.84	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.885

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	52.993	14.92	38.07	0.18	0	False	0
Internal Elements							
Int	168						9
Party Elements							
P. Wall	52.525						0
P. Ceiling	74.4						0
Floor	74.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1894

Length	Psi-value		
5.5425	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.5425	0.021	E3	Sill
15.97	0.016	E4	Jamb
27.54	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
19.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
19.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 06 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.32
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	148.54	**(P1)**
Transmission heat loss coefficient:	35.3	
Summer heat loss coefficient:	183.87	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W05c)	0.9 x	6.84	81.19	0.38	0.8	0.76	116.23	
						Total	253.53	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	427.67	410.74	418.54	
Total summer gains	701.95	664.27	624.67	**(P5)**
Summer gain/loss ratio	3.82	3.61	3.4	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.68	23.37	23.06	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:28

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 73.7m²
Site Reference : Station Hill - Block F **Plot Reference:** F01 07 - Level 1
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.66 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.36 kg/m²	**Fail**

Excess emissions = 2.7 kg/m² (11.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	40.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.1 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.05 (max. 0.25)	0.05 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	6.94m²
Windows facing: South	5.19m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.05 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 07 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.61
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	73.7 m²	2.75 m

Living area:	31 m² (fraction 0.421)
Front of dwelling faces:	North

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02b	16mm or more	0.8	0.38	1.3	3.47	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	South	1.36	2.55
W04c		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.875	12.13	38.74	0.18	0	False	0
Floor	73.7			0.05			0
Internal Elements							
Int	168.75						9
Party Elements							
P. Wall	52.25						0
P. Ceiling	73.7						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0859

Length	**Psi-value**		
4.755	0.067	E2	Other lintels (including other steel lintels)

SAP Input

4.755	0.03	E3	Sill
15.3	0.045	E4	Jamb
27.4	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
19	0	P3	Intermediate floor between dwellings (in blocks of flats)
19	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 07 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.61
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	153.83	**(P1)**
Transmission heat loss coefficient:	36.3	
Summer heat loss coefficient:	190.18	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02b)	0	1
South (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02b)	0.85	0.9	1	0.76	**(P8)**
South (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02b)	0.9 x	6.94	112.21	0.38	0.8	0.76	162.99	
South (W04c)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	284.88	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	425.33	408.53	416.36	
Total summer gains	720.62	693.4	697.43	**(P5)**
Summer gain/loss ratio	3.79	3.65	3.67	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.64	23.4	23.32	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:28

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 51.4m²

Site Reference : Station Hill - Block F

Plot Reference: F01 08 - Level 1

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.52 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.05 kg/m²	**Fail**

Excess emissions = 4.53 kg/m² (20.1 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	26.9 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	31.3 kWh/m²	**Fail**

Excess energy = 4.43 kg/m² (16.5 %)

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	3.47m²
Windows facing: South	5.19m²
Ventilation rate:	2.60
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 08 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 16.02
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	51.4 m²	2.75 m

Living area:	29.8 m² (fraction 0.58)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	South	1.36	2.55
W04c		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	20.625	8.66	11.96	0.18	0	False	0
Internal Elements							
Int	91.5						9
Party Elements							
P. Wall	62.7						0
P. Ceiling	51.4						0
Floor	51.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3913

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.03	E3	Sill
10.2	0.045	E4	Jamb
8.22	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
22.8	0	P3	Intermediate floor between dwellings (in blocks of flats)
22.8	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

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SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 08 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 16.02
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	121.28	**(P1)**
Transmission heat loss coefficient:	20.9	
Summer heat loss coefficient:	142.2	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02b)	0	1
South (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02b)	0.85	0.9	1	0.76	**(P8)**
South (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02b)	0.9 x	3.47	112.21	0.38	0.8	0.76	81.49	
South (W04c)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	203.38	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	332.45	319.64	326	
Total summer gains	543.27	523.02	526.66	**(P5)**
Summer gain/loss ratio	3.82	3.68	3.7	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.71	23.47	23.39	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:28

Project Information:

Assessed By: ()
Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE
Total Floor Area: 53.4m²
Site Reference : Station Hill - Block F
Plot Reference: F01 09 - Level 1
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.29 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	22.89 kg/m²	**Fail**

Excess emissions = 0.6 kg/m² (2.7 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	27.1 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	28.8 kWh/m²	**Fail**

Excess energy = 1.67 kg/m² (06.2 %)

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	3.47m²
Windows facing: South	5.19m²
Ventilation rate:	2.40
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

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10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 09 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 222.88
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	53.4 m²	2.75 m

Living area:	30.6 m² (fraction 0.573)
Front of dwelling faces:	North

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	South	1.36	2.55
W04c		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	22.825	8.66	14.17	0.18	0	False	14
Internal Elements							
Int	90						9
Party Elements							
P. Wall	64.075						20
P. Ceiling	53.4						100
Floor	53.4						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3686

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.045	E4	Jamb
9.8	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
3.395	0.03	E3	Sill
23.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 09 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 222.88
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.4 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	116.31	**(P1)**
Transmission heat loss coefficient:	21.7	
Summer heat loss coefficient:	137.97	**(P2)**

Overhangs:

Orientation:	Ratio:	Z_overhangs:
South (W02b)	0	1
South (W04c)	0	1

Solar shading:

Orientation:	Z blinds:	Solar access:	Overhangs:	Z summer:	
South (W02b)	0.85	0.9	1	0.76	**(P8)**
South (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		Area	Flux	g_	FF	Shading	Gains	
South (W02b)	0.9 x	3.47	112.21	0.38	0.8	0.76	81.49	
South (W04c)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	203.38	**(P3/P4)**

Internal gains:

	June	July	August	
Internal gains	341.32	328.14	334.66	
Total summer gains	552.14	531.52	535.32	**(P5)**
Summer gain/loss ratio	4	3.85	3.88	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.44	0.44	0.44	
Threshold temperature	20.44	22.19	22.12	**(P7)**
Likelihood of high internal temperature	**Not significant**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:27

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 58.5m²
Site Reference : Station Hill - Block F **Plot Reference:** F01 10 - Level 1
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	25.14 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	29.07 kg/m²	**Fail**

Excess emissions = 3.93 kg/m² (15.6 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	40.1 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	36.7 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	3.47m²
Windows facing: East	6.05m²
Ventilation rate:	2.50
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 10 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 16.5
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	58.5 m²	2.75 m

Living area:	33.2 m² (fraction 0.568)
Front of dwelling faces:	West

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	East	1.36	2.55
W05c		Ext	East	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.05	9.52	40.53	0.18	0	False	0
Internal Elements							
Int	107.25						9
Party Elements							
P. Wall	44.275						0
P. Ceiling	58.5						0
Floor	58.5						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1978

Length	Psi-value		
3.7325	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.7325	0.03	E3	Sill
10.2	0.045	E4	Jamb
29	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E25	Staggered party wall between dwellings
16.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
16.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery
	Number of wet rooms: Kitchen + 1
	Ductwork: Insulation, rigid
	Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating
	Standard tariff
	Fuel: Electricity
	Info Source: SAP Tables
	SAP Table: 424
	In screed above insulation
	Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control
	Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak)
	Water code: 903
	Fuel :Electricity
	Hot water cylinder
	Cylinder volume: 145 litres
	Cylinder insulation: Measured loss, 1.18kWh/day
	Primary pipework insulation: False
	Cylinderstat: True
	Cylinder in heated space: True
	Immersion: Single
	Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passive Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 10 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	West
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 16.5
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.5 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	132.72	**(P1)**
Transmission heat loss coefficient:	29	
Summer heat loss coefficient:	161.68	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02b)	0	1
East (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02b)	0.85	0.9	1	0.76	**(P8)**
East (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02b)	0.9 x	3.47	117.51	0.38	0.8	0.76	85.34	
East (W05c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	234.14	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	363.57	349.43	356.3	
Total summer gains	612.12	583.57	562.29	**(P5)**
Summer gain/loss ratio	3.79	3.61	3.48	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.67	23.39	23.16	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:27

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 69.7m²
Site Reference : Station Hill - Block F **Plot Reference:** F01 14 - Level 1
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.23 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.93 kg/m²	**Fail**

Excess emissions = 1.7 kg/m² (7.3 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	37.8 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	31.8 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	0.05 (max. 0.25)	0.05 (max. 0.70)	**OK**
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system: Electric underfloor heating - electric
In screed above insulation

Secondary heating system: None

5 Cylinder insulation

Hot water Storage: Measured cylinder loss: 1.18 kWh/day
Permitted by DBSCG: 1.85 kWh/day **OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Floors U-value	0.05 W/m²K
Photovoltaic array	

SAP Input

Property Details: F01 14 - Level 1

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 24.65
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	69.7 m²	2.75 m

Living area:	28.1 m² (fraction 0.403)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	30.25	10.09	20.16	0.18	0	False	0
Floor	43.3			0.05			0
Internal Elements							
Int	190.878						9
Party Elements							
P. Wall	71.5						0
P. Ceiling	43.3						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1245

Length	Psi-value		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
14	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E25	Staggered party wall between dwellings
26	0	P3	Intermediate floor between dwellings (in blocks of flats)
26	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F01 14 - Level 1

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 24.65
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	145.48	**(P1)**
Transmission heat loss coefficient:	27.4	
Summer heat loss coefficient:	172.9	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	410.07	393.96	401.66	
Total summer gains	673.5	642.12	619.98	**(P5)**
Summer gain/loss ratio	3.9	3.71	3.59	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.83	1.83	1.83	
Threshold temperature	21.72	23.44	23.21	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:27

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 50.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 01 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.32 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.87 kg/m²	**Fail**

Excess emissions = 0.55 kg/m² (2.3 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	33.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	32.7 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	2.60
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 01 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 223.17
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	50.4 m²	2.75 m

Living area:	27.5 m² (fraction 0.546)
Front of dwelling faces:	East

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04c		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.425	9.23	9.19	0.18	0	False	14
Internal Elements							
Int	84.425						9
Party Elements							
P. Wall	64.35						20
P. Ceiling	50.4						100
Floor	50.4						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.4314

Length	Psi-value		
3.62	0.067	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.045	E4	Jamb
6.16	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
3.62	0.03	E3	Sill
23.4	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.4	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 01 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 223.17
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	118.92	**(P1)**
Transmission heat loss coefficient:	21	
Summer heat loss coefficient:	139.93	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04c)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	327.94	315.31	321.57	
Total summer gains	568.91	542.32	521.28	**(P5)**
Summer gain/loss ratio	4.07	3.88	3.73	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.44	0.44	0.44	
Threshold temperature	20.5	22.21	21.96	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:27

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 80m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 02 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.98 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.29 kg/m²	**Fail**

Excess emissions = 3.31 kg/m² (13.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	44.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	38.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	4.04m²
Windows facing: West	10.38m²
Windows facing: North	5.19m²
Ventilation rate:	2.60
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 02 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 18.59
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	80 m²	2.75 m

Living area:	36.7 m² (fraction 0.459)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04a	16mm or more	0.8	0.38	1.3	5.19	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04a		Ext	West	2.035	2.55
W04c		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	59.4	19.61	39.79	0.18	0	False	0
Internal Elements							
Int	165.275						9
Party Elements							
P. Wall	48.675						0
P. Ceiling	80						0
Floor	80						0

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1845

Length	Psi-value		
7.69	0.067	E2	Other lintels (including other steel lintels)
7.69	0.03	E3	Sill
20.4	0.045	E4	Jamb
27.82	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
17.7	0	P3	Intermediate floor between dwellings (in blocks of flats)
17.7	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 2
Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff
In Smoke Control Area: Unknown
Conservatory: No conservatory
Low energy lights: 100%
Terrain type: Dense urban
EPC language: English

DRAFT

SAP Input

Wind turbine:	No
Passivhaus Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 02 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 18.59
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	188.76	**(P1)**
Transmission heat loss coefficient:	42.4	
Summer heat loss coefficient:	231.12	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
West (W04a)	0	1
North (W04c)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04a)	0.85	0.9	1	0.76	**(P8)**
North (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	4.04	81.19	0.38	0.8	0.76	68.65	
West (W04a)	0.9 x	10.38	117.51	0.38	0.8	0.76	255.29	
North (W04c)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	412.13	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	447.35	429.56	437.64	
Total summer gains	888.03	841.69	789.77	**(P5)**
Summer gain/loss ratio	3.84	3.64	3.42	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.87	1.87	1.87	
Threshold temperature	21.71	23.41	23.09	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:27

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 67.9m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 03 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.72 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.28 kg/m²	**Fail**

Excess emissions = 2.56 kg/m² (10.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	38.8 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.8 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 03 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 19.31
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	67.9 m²	2.75 m

Living area:	27.5 m² (fraction 0.405)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04c		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	31.075	13.27	17.81	0.18	0	False	0
Internal Elements							
Int	145.698						9
Party Elements							
P. Wall	68.75						0
P. Ceiling	67.9						0
Floor	67.9						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3077

Length	Psi-value		
5.205	0.067	E2	Other lintels (including other steel lintels)

SAP Input

5.205	0.03	E3	Sill
15.3	0.045	E4	Jamb
12.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
25	0	P3	Intermediate floor between dwellings (in blocks of flats)
25	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 03 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 19.31
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	135.56	**(P1)**
Transmission heat loss coefficient:	29.2	
Summer heat loss coefficient:	164.73	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04c)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	402.83	386.99	394.4	
Total summer gains	646.78	612.47	577.74	**(P5)**
Summer gain/loss ratio	3.93	3.72	3.51	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.79	23.48	23.17	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:27

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 68.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 04 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.68 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.40 kg/m²	**Fail**

Excess emissions = 0.72 kg/m² (3 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	39.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.6 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	6.05m²
Ventilation rate:	2.10
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 04 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 224.98
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	68.4 m²	2.75 m

Living area:	28.9 m² (fraction 0.423)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	29.15	14.13	15.02	0.18	0	False	14
Internal Elements							
Int	165.128						9
Party Elements							
P. Wall	69.025						20
P. Ceiling	68.4						100
Floor	68.4						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2931

Length	Psi-value		
5.5425	0.013	E2	Other lintels (including other steel lintels)

SAP Input

15.3	0.016	E4	Jamb
10.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
5.5425	0.021	E3	Sill
25.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
25.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 04 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 224.98
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.1 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	130.35	**(P1)**
Transmission heat loss coefficient:	28.7	
Summer heat loss coefficient:	159.06	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W05c)	0.9 x	6.05	81.19	0.38	0.8	0.76	102.8	
						Total	240.1	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	404.82	388.88	396.33	
Total summer gains	664.58	628.98	591.55	**(P5)**
Summer gain/loss ratio	4.18	3.95	3.72	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.43	0.43	0.43	
Threshold temperature	20.6	22.28	21.94	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:27

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 38.8m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 05 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	30.15 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	33.43 kg/m²	**Fail**

Excess emissions = 3.28 kg/m² (10.9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	43.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	38.6 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	4.04m²
Windows facing: North	6.05m²
Ventilation rate:	2.80
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 05 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 17.74
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	38.8 m²	2.75 m

Living area:	31.4 m² (fraction 0.809)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.05	10.09	6.96	0.18	0	False	0
Internal Elements							
Int	76.5						9
Party Elements							
P. Wall	55.825						0
P. Ceiling	38.8						0
Floor	38.8						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3781

Length	Psi-value		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
4.4	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
20.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
20.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 05 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 17.74
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.8 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	98.59	**(P1)**
Transmission heat loss coefficient:	20.2	
Summer heat loss coefficient:	118.76	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	4.04	81.19	0.38	0.8	0.76	68.65	
North (W05c)	0.9 x	6.05	81.19	0.38	0.8	0.76	102.8	
						Total	171.45	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	277.8	267.34	272.8	
Total summer gains	463.29	438.79	412.2	**(P5)**
Summer gain/loss ratio	3.9	3.69	3.47	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.78	23.47	23.15	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:27

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 74.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 06 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.77 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.99 kg/m²	**Fail**

Excess emissions = 2.22 kg/m² (9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	44.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	36.5 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	6.84m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 06 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.32
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	74.4 m²	2.75 m

Living area:	30.9 m² (fraction 0.415)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W05c	16mm or more	0.8	0.38	1.3	6.84	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.885

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	52.993	14.92	38.07	0.18	0	False	0
Internal Elements							
Int	168						9
Party Elements							
P. Wall	52.525						0
P. Ceiling	74.4						0
Floor	74.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1894

Length	Psi-value		
5.5425	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.5425	0.021	E3	Sill
15.97	0.016	E4	Jamb
27.54	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
19.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
19.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 06 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.32
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	148.54	**(P1)**
Transmission heat loss coefficient:	35.3	
Summer heat loss coefficient:	183.87	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W05c)	0.9 x	6.84	81.19	0.38	0.8	0.76	116.23	
						Total	253.53	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	427.67	410.74	418.54	
Total summer gains	701.95	664.27	624.67	**(P5)**
Summer gain/loss ratio	3.82	3.61	3.4	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.68	23.37	23.06	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:26

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 73.7m²

Site Reference : Station Hill - Block F

Plot Reference: F02 07 - Level 2

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	21.15 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.23 kg/m²	**Fail**

Excess emissions = 4.08 kg/m² (19.3 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	31.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.1 kWh/m²	**Fail**

Excess energy = 1.46 kg/m² (04.6 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	6.94m²
Windows facing: South	5.19m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 07 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.61
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	73.7 m²	2.75 m

Living area:	31 m² (fraction 0.421)
Front of dwelling faces:	North

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02b	16mm or more	0.8	0.38	1.3	3.47	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	South	1.36	2.55
W04c		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.875	12.13	38.74	0.18	0	False	0
Internal Elements							
Int	168.75						9
Party Elements							
P. Wall	52.25						0
P. Ceiling	73.7						0
Floor	73.7						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2103

Length	**Psi-value**		
4.755	0.067	E2	Other lintels (including other steel lintels)

SAP Input

4.755	0.03	E3	Sill
15.3	0.045	E4	Jamb
27.4	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
19	0	P3	Intermediate floor between dwellings (in blocks of flats)
19	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 2

Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

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Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

Conservatory: No conservatory

Low energy lights: 100%

Terrain type: Dense urban

EPC language: English

Wind turbine: No

Assessor's Zero Carbon Home: No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 07 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.61
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	153.83	**(P1)**
Transmission heat loss coefficient:	32.7	
Summer heat loss coefficient:	186.49	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02b)	0	1
South (W04c)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02b)	0.85	0.9	1	0.76	**(P8)**
South (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02b)	0.9 x	6.94	112.21	0.38	0.8	0.76	162.99	
South (W04c)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	284.88	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	425.33	408.53	416.36	
Total summer gains	720.62	693.4	697.43	**(P5)**
Summer gain/loss ratio	3.86	3.72	3.74	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.72	23.47	23.4	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:26

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 51.4m²

Site Reference : Station Hill - Block F

Plot Reference: F02 08 - Level 2

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.52 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.09 kg/m²	**Fail**

Excess emissions = 4.57 kg/m² (20.3 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	26.9 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	31.3 kWh/m²	**Fail**

Excess energy = 4.43 kg/m² (16.5 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	3.47m²
Windows facing: South	5.19m²
Ventilation rate:	2.60
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 08 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 16.02
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	51.4 m²	2.75 m

Living area:	29.8 m² (fraction 0.58)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	South	1.36	2.55
W04c		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	20.625	8.66	11.96	0.18	0	False	0
Internal Elements							
Int	91.5						9
Party Elements							
P. Wall	62.7						0
P. Ceiling	51.4						0
Floor	51.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3912

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.03	E3	Sill
10.2	0.045	E4	Jamb
8.2	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
22.8	0	P3	Intermediate floor between dwellings (in blocks of flats)
22.8	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 08 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 16.02
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	121.28	**(P1)**
Transmission heat loss coefficient:	20.9	
Summer heat loss coefficient:	142.2	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02b)	0	1
South (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02b)	0.85	0.9	1	0.76	**(P8)**
South (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02b)	0.9 x	3.47	112.21	0.38	0.8	0.76	81.49	
South (W04c)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	203.38	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	332.45	319.64	326	
Total summer gains	543.27	523.02	526.66	**(P5)**
Summer gain/loss ratio	3.82	3.68	3.7	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.71	23.47	23.39	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:26

Project Information:

Assessed By: ()
Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE
Total Floor Area: 53.4m²
Site Reference : Station Hill - Block F
Plot Reference: F02 09 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.29 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.87 kg/m²	**Fail**

Excess emissions = 4.58 kg/m² (20.5 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	27.1 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	31.4 kWh/m²	**Fail**

Excess energy = 4.27 kg/m² (15.7 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	3.47m²
Windows facing: South	5.19m²
Ventilation rate:	2.60
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 09 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 15.17
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	53.4 m²	2.75 m

Living area:	30.6 m² (fraction 0.573)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	South	1.36	2.55
W04c		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	22.825	8.66	14.17	0.18	0	False	0
Internal Elements							
Int	90						9
Party Elements							
P. Wall	64.075						0
P. Ceiling	53.4						0
Floor	53.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3686

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.03	E3	Sill
10.2	0.045	E4	Jamb
9.8	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
23.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 09 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 15.17
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	126	**(P1)**
Transmission heat loss coefficient:	21.7	
Summer heat loss coefficient:	147.66	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02b)	0	1
South (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02b)	0.85	0.9	1	0.76	**(P8)**
South (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02b)	0.9 x	3.47	112.21	0.38	0.8	0.76	81.49	
South (W04c)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	203.38	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	341.32	328.14	334.66	
Total summer gains	552.14	531.52	535.32	**(P5)**
Summer gain/loss ratio	3.74	3.6	3.63	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.63	23.39	23.32	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:26

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 58.5m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 10 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	25.14 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.35 kg/m²	**Fail**

Excess emissions = 0.21 kg/m² (0.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	40.1 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	3.47m²
Windows facing: East	6.05m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 10 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 221.34
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	58.5 m²	2.75 m

Living area:	33.2 m² (fraction 0.568)
Front of dwelling faces:	West

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	East	1.36	2.55
W05c		Ext	East	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.05	9.52	40.53	0.18	0	False	14
Internal Elements							
Int	107.25						9
Party Elements							
P. Wall	44.275						20
P. Ceiling	58.5						100
Floor	58.5						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.13

Length	Psi-value		
3.7325	0.067	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.045	E4	Jamb
29	0.05	E7	Party floor between dwellings (in blocks of flats)
5.5	0.06	E25	Staggered party wall between dwellings
2.75	0.015	E16	Corner (normal)
3.7325	0.03	E3	Sill
16.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
16.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 10 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	West
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 221.34
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	116.8	**(P1)**
Transmission heat loss coefficient:	25.6	
Summer heat loss coefficient:	142.36	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02b)	0	1
East (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02b)	0.85	0.9	1	0.76	**(P8)**
East (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02b)	0.9 x	3.47	117.51	0.38	0.8	0.76	85.34	
East (W05c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	234.14	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	363.57	349.43	356.3	
Total summer gains	612.12	583.57	562.29	**(P5)**
Summer gain/loss ratio	4.3	4.1	3.95	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.45	0.45	0.45	
Threshold temperature	20.75	22.45	22.2	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:26

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 82.2m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 11 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.4 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.89 kg/m²	**Fail**

Excess emissions = 2.49 kg/m² (10.6 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	42.2 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	3.47m²
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 11 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 17.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	82.2 m²	2.75 m

Living area:	42.5 m² (fraction 0.517)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	East	1.36	2.55
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	82.775	13.56	69.22	0.18	0	False	0
Internal Elements							
Int	161.975						9
Party Elements							
P. Wall	27.885						0
P. Ceiling	82.2						0
Floor	82.2						0

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0903

Length	Psi-value		
1.36	0.067	E2	Other lintels (including other steel lintels)
1.36	0.03	E3	Sill
5.1	0.045	E4	Jamb
19.5	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
3.94	0.013	E2	Other lintels (including other steel lintels)
3.94	0.021	E3	Sill
10.2	0.016	E4	Jamb
10.14	0	P3	Intermediate floor between dwellings (in blocks of flats)
10.14	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 1

Pressure test: 3

DRAFT

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

Conservatory: No conservatory

SAP Input

Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 11 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 17.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	171.57	**(P1)**
Transmission heat loss coefficient:	36.7	
Summer heat loss coefficient:	208.26	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02b)	0	1
West (W03a)	0	1
West (W5c)	0	1

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Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02b)	0.85	0.9	1	0.76	**(P8)**
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02b)	0.9 x	3.47	117.51	0.38	0.8	0.76	85.34	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	333.5	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	454.87	436.78	445.05	
Total summer gains	808.89	770.28	738.46	**(P5)**
Summer gain/loss ratio	3.88	3.7	3.55	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.76	23.47	23.22	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:26

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 37m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 12 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.21 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	33.91 kg/m²	**Fail**

Excess emissions = 4.7 kg/m² (16.1 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	39.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	39.0 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	3.60
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 12 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 12.44
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	37 m²	2.75 m

Living area:	30.9 m² (fraction 0.835)
Front of dwelling faces:	East

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	16.225	10.09	6.14	0.18	0	False	0
Internal Elements							
Int	51.15						9
Party Elements							
P. Wall	55						0
P. Ceiling	37						0
Floor	37						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3877

Length	Psi-value		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
3.8	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
20	0	P3	Intermediate floor between dwellings (in blocks of flats)
20	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 12 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 12.44
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	120.88	**(P1)**
Transmission heat loss coefficient:	19.9	
Summer heat loss coefficient:	140.74	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	270.42	260.28	265.63	
Total summer gains	533.85	508.44	483.95	**(P5)**
Summer gain/loss ratio	3.79	3.61	3.44	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.91	1.91	1.91	
Threshold temperature	21.71	23.43	23.15	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:26

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 43.3m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 13 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.45 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	30.46 kg/m²	**Fail**

Excess emissions = 4.01 kg/m² (15.2 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	36.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.6 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	3.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 13 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 13.38
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	43.3 m²	2.75 m

Living area:	21.7 m² (fraction 0.501)
Front of dwelling faces:	East

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.7	10.09	8.61	0.18	0	False	0
Internal Elements							
Int	64.35						9
Party Elements							
P. Wall	58.575						0
P. Ceiling	43.3						0
Floor	43.3						0

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.3665			
	Length	**Psi-value**		
	3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
5.6	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
21.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
21.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 13 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 13.38
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	125.74	**(P1)**
Transmission heat loss coefficient:	20.9	
Summer heat loss coefficient:	146.62	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	296.84	285.56	291.31	
Total summer gains	560.27	533.72	509.64	**(P5)**
Summer gain/loss ratio	3.82	3.64	3.48	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.91	1.91	1.91	
Threshold temperature	21.73	23.45	23.18	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:26

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 44m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 14 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.27 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.32 kg/m²	**Fail**

Excess emissions = 0.05 kg/m² (0.2 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	36.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	2.90
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 14 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 222.21
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	44 m²	2.75 m

Living area:	22 m² (fraction 0.5)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	19.525	10.09	9.43	0.18	0	False	14
Internal Elements							
Int	63.36						9
Party Elements							
P. Wall	57.75						20
P. Ceiling	44						100
Floor	44						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3062

Length	**Psi-value**		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.016	E4	Jamb
6.2	0.05	E7	Party floor between dwellings (in blocks of flats)
5.5	0.06	E18	Party wall between dwellings
3.9575	0.021	E3	Sill
21	0	P3	Intermediate floor between dwellings (in blocks of flats)
21	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 14 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 222.21
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.9 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	115.8	**(P1)**
Transmission heat loss coefficient:	20.1	
Summer heat loss coefficient:	135.94	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	299.87	288.45	294.25	
Total summer gains	563.29	536.61	512.57	**(P5)**
Summer gain/loss ratio	4.14	3.95	3.77	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.44	0.44	0.44	
Threshold temperature	20.59	22.29	22.02	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:25

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 43.3m²
Site Reference : Station Hill - Block F **Plot Reference:** F02 15 - Level 2
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.35 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	30.31 kg/m²	**Fail**

Excess emissions = 3.96 kg/m² (15 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	36.2 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	3.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F02 15 - Level 2

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 13.6
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	43.3 m²	2.75 m

Living area:	21.2 m² (fraction 0.49)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.875	10.09	7.78	0.18	0	False	0
Internal Elements							
Int	65.45						9
Party Elements							
P. Wall	58.575						0
P. Ceiling	43.3						0
Floor	43.3						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3787

Length	Psi-value		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
5	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
21.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
21.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 1
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 3

Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 145 litres
Cylinder insulation: Measured loss, 1.18kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

Conservatory: No conservatory

Low energy lights: 100%

Terrain type: Dense urban

EPC language: English

Wind turbine: No

Assessor's Zero Carbon Home: No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F02 15 - Level 2

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 13.6
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	125.74	**(P1)**
Transmission heat loss coefficient:	20.6	
Summer heat loss coefficient:	146.38	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	296.84	285.56	291.31	
Total summer gains	560.27	533.72	509.64	**(P5)**
Summer gain/loss ratio	3.83	3.65	3.48	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.9	1.9	1.9	
Threshold temperature	21.73	23.45	23.19	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:25

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 50.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 01 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.32 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.96 kg/m²	**Fail**

Excess emissions = 3.64 kg/m² (15 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	33.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.1 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	2.80
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 01 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 15.08
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	50.4 m²	2.75 m

Living area:	27.5 m² (fraction 0.546)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04c		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.425	9.23	9.19	0.18	0	False	0
Internal Elements							
Int	84.425						9
Party Elements							
P. Wall	64.35						0
P. Ceiling	50.4						0
Floor	50.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.4314

Length	Psi-value		
3.62	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.62	0.03	E3	Sill
10.2	0.045	E4	Jamb
6.16	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
23.4	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.4	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 01 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 15.08
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.8 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	128.07	**(P1)**
Transmission heat loss coefficient:	21	
Summer heat loss coefficient:	149.08	**(P2)**

Overhangs:

Orientation:	Ratio:	Z_overhangs:
West (W03a)	0	1
West (W04c)	0	1

DRAFT

Solar shading:

Orientation:	Z blinds:	Solar access:	Overhangs:	Z summer:	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		Area	Flux	g_	FF	Shading	Gains	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04c)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	July	August	
Internal gains	327.94	315.31	321.57	
Total summer gains	568.91	542.32	521.28	**(P5)**
Summer gain/loss ratio	3.82	3.64	3.5	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.71	23.43	23.19	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:25

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 80m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 02 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.98 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.22 kg/m²	**Fail**

Excess emissions = 2.24 kg/m² (9.3 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	44.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	41.1 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	4.04m²
Windows facing: West	10.38m²
Windows facing: North	5.19m²
Ventilation rate:	2.40
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 02 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 217.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	80 m²	2.75 m

Living area:	36.7 m² (fraction 0.459)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04a	16mm or more	0.8	0.38	1.3	5.19	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04a		Ext	West	2.035	2.55
W04c		Ext	North	2.035	2.55

Overshading: Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	59.4	19.61	39.79	0.18	0	False	14
Internal Elements							
Int	165.275						9
Party Elements							
P. Wall	48.675						20
P. Ceiling	80						100
Floor	80						80

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1845

Length	Psi-value		
7.69	0.067	E2	Other lintels (including other steel lintels)
20.4	0.045	E4	Jamb
27.82	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
7.69	0.03	E3	Sill
17.7	0	P3	Intermediate floor between dwellings (in blocks of flats)
17.7	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)
Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True
Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 2
Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff
In Smoke Control Area: Unknown
Conservatory: No conservatory
Low energy lights: 100%
Terrain type: Dense urban
EPC language: English

SAP Input

Wind turbine:	No
Passivhaus Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 02 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 217.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.4 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	174.24	**(P1)**
Transmission heat loss coefficient:	42.4	
Summer heat loss coefficient:	216.6	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
West (W04a)	0	1
North (W04c)	0	1

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Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04a)	0.85	0.9	1	0.76	**(P8)**
North (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	4.04	81.19	0.38	0.8	0.76	68.65	
West (W04a)	0.9 x	10.38	117.51	0.38	0.8	0.76	255.29	
North (W04c)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	412.13	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	447.35	429.56	437.64	
Total summer gains	888.03	841.69	789.77	**(P5)**
Summer gain/loss ratio	4.1	3.89	3.65	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.48	0.48	0.48	
Threshold temperature	20.58	22.26	21.92	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:25

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 67.9m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 03 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.71 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.26 kg/m²	**Fail**

Excess emissions = 2.55 kg/m² (10.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	38.8 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.8 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

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10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 03 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 19.31
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	67.9 m²	2.75 m

Living area:	27.5 m² (fraction 0.405)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04c		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	31.075	13.27	17.81	0.18	0	False	0
Internal Elements							
Int	145.698						9
Party Elements							
P. Wall	68.75						0
P. Ceiling	67.9						0
Floor	67.9						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3058

Length	Psi-value		
5.205	0.067	E2	Other lintels (including other steel lintels)

SAP Input

5.205	0.03	E3	Sill
15.3	0.045	E4	Jamb
12.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.5	0.12	E18	Party wall between dwellings
2.5	0.12	E25	Staggered party wall between dwellings
25	0	P3	Intermediate floor between dwellings (in blocks of flats)
25	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 03 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 19.31
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	135.56	**(P1)**
Transmission heat loss coefficient:	29.1	
Summer heat loss coefficient:	164.67	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04c)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	402.83	386.99	394.4	
Total summer gains	646.78	612.47	577.74	**(P5)**
Summer gain/loss ratio	3.93	3.72	3.51	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.79	23.48	23.17	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:25

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 68.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 04 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.68 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.93 kg/m²	**Fail**

Excess emissions = 2.25 kg/m² (9.5 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	39.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.4 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	6.05m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

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10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 04 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 21.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	68.4 m²	2.75 m

Living area:	28.9 m² (fraction 0.423)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	29.15	14.13	15.02	0.18	0	False	0
Internal Elements							
Int	165.128						9
Party Elements							
P. Wall	69.025						0
P. Ceiling	68.4						0
Floor	68.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2931

Length	Psi-value		
5.5425	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.5425	0.021	E3	Sill
15.3	0.016	E4	Jamb
10.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
25.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
25.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Low Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 04 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 21.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	142.77	**(P1)**
Transmission heat loss coefficient:	28.7	
Summer heat loss coefficient:	171.48	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W05c)	0.9 x	6.05	81.19	0.38	0.8	0.76	102.8	
						Total	240.1	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	404.82	388.88	396.33	
Total summer gains	664.58	628.98	591.55	**(P5)**
Summer gain/loss ratio	3.88	3.67	3.45	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.85	1.85	1.85	
Threshold temperature	21.72	23.42	23.1	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:25

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 38.8m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 05 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	28.82 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	30.38 kg/m²	**Fail**

Excess emissions = 1.56 kg/m² (5.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	39.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.2 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	4.04m²
Windows facing: North	6.05m²
Ventilation rate:	3.00
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 05 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 17.74
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	38.8 m²	2.75 m

Living area:	31.4 m² (fraction 0.809)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.05	10.09	6.96	0.18	0	False	0
Internal Elements							
Int	76.5						9
Party Elements							
P. Wall	55.825						0
P. Ceiling	38.8						0
Floor	38.8						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0923

Length	Psi-value		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
4.4	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
20.3	0	P3	Intermediate floor between dwellings (in blocks of flats)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 1
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 3
Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 145 litres
Cylinder insulation: Measured loss, 1.18kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff
In Smoke Control Area: Unknown
Conservatory: No conservatory
Low energy lights: 100%
Terrain type: Dense urban
EPC language: English
Wind turbine: No
Assessed as Zero Carbon Home: No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 05 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 17.74
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	105.63	**(P1)**
Transmission heat loss coefficient:	15.3	
Summer heat loss coefficient:	120.93	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	4.04	81.19	0.38	0.8	0.76	68.65	
North (W05c)	0.9 x	6.05	81.19	0.38	0.8	0.76	102.8	
						Total	171.45	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	277.8	267.34	272.8	
Total summer gains	463.29	438.79	412.2	**(P5)**
Summer gain/loss ratio	3.83	3.63	3.41	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.71	23.4	23.08	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:25

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 74.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 06 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.77 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.99 kg/m²	**Fail**

Excess emissions = 2.22 kg/m² (9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	44.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	36.5 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	6.84m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 06 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.32
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	74.4 m²	2.75 m

Living area:	30.9 m² (fraction 0.415)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W05c	16mm or more	0.8	0.38	1.3	6.84	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.885

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	52.993	14.92	38.07	0.18	0	False	0
Internal Elements							
Int	168						9
Party Elements							
P. Wall	52.525						0
P. Ceiling	74.4						0
Floor	74.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1894

Length	**Psi-value**		
5.5425	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.5425	0.021	E3	Sill
15.97	0.016	E4	Jamb
27.54	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
19.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
19.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 06 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.32
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	148.54	**(P1)**
Transmission heat loss coefficient:	35.3	
Summer heat loss coefficient:	183.87	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W05c)	0.9 x	6.84	81.19	0.38	0.8	0.76	116.23	
						Total	253.53	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	427.67	410.74	418.54	
Total summer gains	701.95	664.27	624.67	**(P5)**
Summer gain/loss ratio	3.82	3.61	3.4	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.68	23.37	23.06	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:25

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 73.7m²

Site Reference : Station Hill - Block F

Plot Reference: F05 07 - Level 5

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	21.31 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.88 kg/m²	**Fail**

Excess emissions = 3.57 kg/m² (16.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	31.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	32.1 kWh/m²	**Fail**

Excess energy = 0.53 kg/m² (01.7 %)

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	4.7m²
Windows facing: South	5.19m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 07 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.61
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	73.7 m²	2.75 m

Living area:	31 m² (fraction 0.421)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	2
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.875	9.89	40.99	0.18	0	False	0
Internal Elements							
Int	168.75						9
Party Elements							
P. Wall	52.25						0
P. Ceiling	73.7						0
Floor	73.7						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2074

Length	**Psi-value**		
4.755	0.067	E2	Other lintels (including other steel lintels)

SAP Input

4.755	0.03	E3	Sill
12	0.045	E4	Jamb
27.4	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
19	0	P3	Intermediate floor between dwellings (in blocks of flats)
19	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 2

Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

Conservatory: No conservatory

Low energy lights: 100%

Terrain type: Dense urban

EPC language: English

Wind turbine: No

Assessor's Zero Carbon Home: No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 07 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.61
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	147.14	**(P1)**
Transmission heat loss coefficient:	30.2	
Summer heat loss coefficient:	177.29	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	4.7	112.21	0.38	0.8	0.76	110.38	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	232.27	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	425.92	409.17	417.2	
Total summer gains	666.69	641.44	646.36	**(P5)**
Summer gain/loss ratio	3.76	3.62	3.65	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.62	23.37	23.3	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:25

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 51.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 08 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.54 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	22.81 kg/m²	**Fail**

Excess emissions = 0.27 kg/m² (1.2 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	26.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	28.0 kWh/m²	**Fail**

Excess energy = 1.47 kg/m² (05.5 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	2.35m²
Windows facing: South	5.19m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 08 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 223.98
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	51.4 m²	2.75 m

Living area:	29.8 m² (fraction 0.58)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	20.625	7.54	13.09	0.18	0	False	14
Internal Elements							
Int	91.5						9
Party Elements							
P. Wall	62.7						20
P. Ceiling	51.4						100
Floor	51.4						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3828

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

8.55	0.045	E4	Jamb
7.5	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
3.395	0.03	E3	Sill
22.8	0	P3	Intermediate floor between dwellings (in blocks of flats)
22.8	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 08 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 223.98
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	107.28	**(P1)**
Transmission heat loss coefficient:	19.6	
Summer heat loss coefficient:	126.85	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	2.35	112.21	0.38	0.8	0.76	55.19	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	177.08	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	332.71	319.92	326.36	
Total summer gains	516.26	497	501.07	**(P5)**
Summer gain/loss ratio	4.07	3.92	3.95	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.43	0.43	0.43	
Threshold temperature	20.5	22.25	22.18	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:24

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 53.4m²

Site Reference : Station Hill - Block F

Plot Reference: F05 09 - Level 5

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.3 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.47 kg/m²	**Fail**

Excess emissions = 4.17 kg/m² (18.7 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	26.8 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	30.4 kWh/m²	**Fail**

Excess energy = 3.62 kg/m² (13.5 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	2.35m²
Windows facing: South	5.19m²
Ventilation rate:	2.40
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 09 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 15.17
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	53.4 m²	2.75 m

Living area:	30.6 m² (fraction 0.573)
Front of dwelling faces:	North

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	22.825	7.54	15.29	0.18	0	False	0
Internal Elements							
Int	90						9
Party Elements							
P. Wall	64.075						0
P. Ceiling	53.4						0
Floor	53.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3561

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.03	E3	Sill
8.55	0.045	E4	Jamb
8.3	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
23.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 09 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 15.17
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.4 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	116.31	**(P1)**
Transmission heat loss coefficient:	20.2	
Summer heat loss coefficient:	136.5	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	2.35	112.21	0.38	0.8	0.76	55.19	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	177.08	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	341.62	328.46	335.08	
Total summer gains	525.18	505.54	509.79	**(P5)**
Summer gain/loss ratio	3.85	3.7	3.73	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.74	23.5	23.43	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:24

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 58.5m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 10 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.96 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	28.55 kg/m²	**Fail**

Excess emissions = 3.59 kg/m² (14.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	39.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.5 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	2.35m²
Windows facing: East	6.05m²
Ventilation rate:	2.40
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 10 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 16.5
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	58.5 m²	2.75 m

Living area:	33.2 m² (fraction 0.568)
Front of dwelling faces:	West

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W05b	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	East	1.36	1.725
W05b		Ext	East	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.05	8.4	41.65	0.18	0	False	0
Internal Elements							
Int	107.25						9
Party Elements							
P. Wall	44.275						0
P. Ceiling	58.5						0
Floor	58.5						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1864

Length	Psi-value		
3.7325	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.7325	0.03	E3	Sill
8.55	0.045	E4	Jamb
29	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E25	Staggered party wall between dwellings
16.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
16.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 10 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	West
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 16.5
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.4 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	127.41	**(P1)**
Transmission heat loss coefficient:	27.2	
Summer heat loss coefficient:	154.62	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02a)	0	1
East (W05b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02a)	0.85	0.9	1	0.76	**(P8)**
East (W05b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02a)	0.9 x	2.35	117.51	0.38	0.8	0.76	57.8	
East (W05b)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	206.6	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	363.85	349.74	356.7	
Total summer gains	583.16	556.33	538.46	**(P5)**
Summer gain/loss ratio	3.77	3.6	3.48	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.66	23.38	23.17	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:24

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 82.2m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 11 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.36 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.69 kg/m²	**Fail**

Excess emissions = 2.33 kg/m² (10 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	41.8 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	34.8 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	2.35m²
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 11 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 17.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	82.2 m²	2.75 m

Living area:	42.5 m² (fraction 0.517)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	East	1.36	1.725
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	82.775	12.44	70.34	0.18	0	False	0
Internal Elements							
Int	161.975						9
Party Elements							
P. Wall	27.885						0
P. Ceiling	82.2						0
Floor	82.2						0

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0903

Length	Psi-value		
1.36	0.067	E2	Other lintels (including other steel lintels)
1.36	0.03	E3	Sill
5.1	0.045	E4	Jamb
19.5	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
3.94	0.013	E2	Other lintels (including other steel lintels)
3.94	0.021	E3	Sill
10.2	0.016	E4	Jamb
10.14	0	P3	Intermediate floor between dwellings (in blocks of flats)
10.14	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 1

Pressure test: 3

DRAFT

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

Conservatory: No conservatory

SAP Input

Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 11 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 17.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	164.11	**(P1)**
Transmission heat loss coefficient:	35.5	
Summer heat loss coefficient:	199.62	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02a)	0	1
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02a)	0.85	0.9	1	0.76	**(P8)**
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

DRAFT

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02a)	0.9 x	2.35	117.51	0.38	0.8	0.76	57.8	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	305.96	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	455.11	437.04	445.39	
Total summer gains	779.89	743	714.56	**(P5)**
Summer gain/loss ratio	3.91	3.72	3.58	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.78	23.5	23.26	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:24

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 37m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 12 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.5 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	30.70 kg/m²	**Fail**

Excess emissions = 1.2 kg/m² (4.1 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	40.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	39.5 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	3.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 12 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 224.49
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	37 m²	2.75 m

Living area:	30.9 m² (fraction 0.835)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	16.225	10.09	6.14	0.18	0	False	14
Internal Elements							
Int	51.15						9
Party Elements							
P. Wall	55						20
P. Ceiling	37						100
Floor	37						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.4567

Length	**Psi-value**		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.016	E4	Jamb
11.8	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
3.9575	0.021	E3	Sill
20	0	P3	Intermediate floor between dwellings (in blocks of flats)
20	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 12 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 224.49
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	107.45	**(P1)**
Transmission heat loss coefficient:	21	
Summer heat loss coefficient:	128.43	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	270.42	260.28	265.63	
Total summer gains	533.85	508.44	483.95	**(P5)**
Summer gain/loss ratio	4.16	3.96	3.77	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.43	0.43	0.43	
Threshold temperature	20.59	22.29	22	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:24

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 43.3m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 13 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.45 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	30.46 kg/m²	**Fail**

Excess emissions = 4.01 kg/m² (15.2 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	36.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	3.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 13 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 13.38
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	43.3 m²	2.75 m

Living area:	21.7 m² (fraction 0.501)
Front of dwelling faces:	East

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.7	10.09	8.61	0.18	0	False	0
Internal Elements							
Int	64.35						9
Party Elements							
P. Wall	58.575						0
P. Ceiling	43.3						0
Floor	43.3						0

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.3665			
	Length	**Psi-value**		
	3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
5.6	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
21.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
21.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 13 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 13.38
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	125.74	**(P1)**
Transmission heat loss coefficient:	20.9	
Summer heat loss coefficient:	146.62	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	296.84	285.56	291.31	
Total summer gains	560.27	533.72	509.64	**(P5)**
Summer gain/loss ratio	3.82	3.64	3.48	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.91	1.91	1.91	
Threshold temperature	21.73	23.45	23.18	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:24

Project Information:

Assessed By: ()
Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE
Total Floor Area: 44m²
Site Reference : Station Hill - Block F
Plot Reference: F05 14 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.27 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.02 kg/m²	**Fail**

Excess emissions = 0.75 kg/m² (2.9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	36.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	34.5 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	2.90
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 14 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 192.96
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	44 m²	2.75 m

Living area:	22 m² (fraction 0.5)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	19.525	10.09	9.43	0.18	0	False	0
Internal Elements							
Int	63.36						9
Party Elements							
P. Wall	57.75						0
P. Ceiling	44						100
Floor	44						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3516

Length	**Psi-value**		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
6.2	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
21	0	P3	Intermediate floor between dwellings (in blocks of flats)
21	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 14 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 192.96
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.9 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	115.8	**(P1)**
Transmission heat loss coefficient:	21	
Summer heat loss coefficient:	136.83	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	299.87	288.45	294.25	
Total summer gains	563.29	536.61	512.57	**(P5)**
Summer gain/loss ratio	4.12	3.92	3.75	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.65	0.65	0.65	
Threshold temperature	20.77	22.47	22.2	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:24

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 43.3m²
Site Reference : Station Hill - Block F **Plot Reference:** F05 15 - Level 5
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.4 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.03 kg/m²	**Fail**

Excess emissions = 0.63 kg/m² (2.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	36.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	34.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	3.00
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F05 15 - Level 5

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 223.18
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	43.3 m²	2.75 m

Living area:	21.2 m² (fraction 0.49)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.875	10.09	7.78	0.18	0	False	14
Internal Elements							
Int	65.45						9
Party Elements							
P. Wall	58.575						20
P. Ceiling	43.3						100
Floor	43.3						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3905

Length	Psi-value		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.016	E4	Jamb
6.5	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
3.9575	0.021	E3	Sill
2.75	0.12	E25	Staggered party wall between dwellings
21.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
21.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F05 15 - Level 5

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 223.18
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	117.88	**(P1)**
Transmission heat loss coefficient:	20.8	
Summer heat loss coefficient:	138.73	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	296.84	285.56	291.31	
Total summer gains	560.27	533.72	509.64	**(P5)**
Summer gain/loss ratio	4.04	3.85	3.67	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.44	0.44	0.44	
Threshold temperature	20.48	22.18	21.91	**(P7)**
Likelihood of high internal temperature	**Not significant**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:24

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 50.4m²

Site Reference : Station Hill - Block F

Plot Reference: F06 01 - Level 6

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.69 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.99 kg/m²	**Fail**

Excess emissions = 1.3 kg/m² (5.3 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	34.8 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.0 kWh/m²	**Fail**

Excess energy = 0.15 kg/m² (00.4 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	2.60
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 01 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 223.17
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	50.4 m²	2.75 m

Living area:	27.5 m² (fraction 0.546)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04c		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.425	9.23	9.19	0.18	0	False	14
Internal Elements							
Int	84.425						9
Party Elements							
P. Wall	64.35						20
P. Ceiling	50.4						100
Floor	50.4						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.5373

Length	Psi-value		
3.62	0.067	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.045	E4	Jamb
13.4	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
6.7	0.14	E7	Party floor between dwellings (in blocks of flats)
3.62	0.03	E3	Sill
23.4	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.4	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 1
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 3

Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 145 litres
Cylinder insulation: Measured loss, 1.18kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

Conservatory: No conservatory

Low energy lights: 100%

Terrain type: Dense urban

EPC language: English

Wind turbine: No

Assessed as Zero Carbon Home: No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 01 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 223.17
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	118.92	**(P1)**
Transmission heat loss coefficient:	23	
Summer heat loss coefficient:	141.88	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04c)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	327.94	315.31	321.57	
Total summer gains	568.91	542.32	521.28	**(P5)**
Summer gain/loss ratio	4.01	3.82	3.67	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.44	0.44	0.44	
Threshold temperature	20.45	22.16	21.91	**(P7)**
Likelihood of high internal temperature	**Not significant**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:23

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 80m²
Site Reference : Station Hill - Block F **Plot Reference:** F06 02 - Level 6
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.97 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.28 kg/m²	**Fail**

Excess emissions = 3.31 kg/m² (13.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	44.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	38.3 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	4.04m²
Windows facing: West	10.38m²
Windows facing: North	5.19m²
Ventilation rate:	2.60
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 02 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 18.59
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	80 m²	2.75 m

Living area:	36.7 m² (fraction 0.459)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04a	16mm or more	0.8	0.38	1.3	5.19	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04a		Ext	West	2.035	2.55
W04c		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	59.4	19.61	39.79	0.18	0	False	0
Internal Elements							
Int	165.275						9
Party Elements							
P. Wall	48.675						0
P. Ceiling	80						0
Floor	80						0

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1835

Length	Psi-value		
7.69	0.067	E2	Other lintels (including other steel lintels)
7.69	0.03	E3	Sill
20.4	0.045	E4	Jamb
27.82	0.14	E7	Party floor between dwellings (in blocks of flats)
5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
17.7	0	P3	Intermediate floor between dwellings (in blocks of flats)
17.7	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 2
Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff
In Smoke Control Area: Unknown
Conservatory: No conservatory
Low energy lights: 100%
Terrain type: Dense urban
EPC language: English

SAP Input

Wind turbine:	No
Passivhaus Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 02 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 18.59
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	188.76	**(P1)**
Transmission heat loss coefficient:	42.3	
Summer heat loss coefficient:	231.06	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
West (W04a)	0	1
North (W04c)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04a)	0.85	0.9	1	0.76	**(P8)**
North (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	4.04	81.19	0.38	0.8	0.76	68.65	
West (W04a)	0.9 x	10.38	117.51	0.38	0.8	0.76	255.29	
North (W04c)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	412.13	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	447.35	429.56	437.64	
Total summer gains	888.03	841.69	789.77	**(P5)**
Summer gain/loss ratio	3.84	3.64	3.42	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.87	1.87	1.87	
Threshold temperature	21.71	23.41	23.09	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:23

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 67.9m²
Site Reference : Station Hill - Block F **Plot Reference:** F06 03 - Level 6
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.72 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.28 kg/m²	**Fail**

Excess emissions = 2.56 kg/m² (10.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	38.8 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.8 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 03 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 19.31
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	67.9 m²	2.75 m

Living area:	27.5 m² (fraction 0.405)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04c		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	31.075	13.27	17.81	0.18	0	False	0
Internal Elements							
Int	145.698						9
Party Elements							
P. Wall	68.75						0
P. Ceiling	67.9						0
Floor	67.9						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3077

Length	Psi-value		
5.205	0.067	E2	Other lintels (including other steel lintels)

SAP Input

5.205	0.03	E3	Sill
15.3	0.045	E4	Jamb
12.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
25	0	P3	Intermediate floor between dwellings (in blocks of flats)
25	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 03 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 19.31
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	135.56	**(P1)**
Transmission heat loss coefficient:	29.2	
Summer heat loss coefficient:	164.73	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04c)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	402.83	386.99	394.4	
Total summer gains	646.78	612.47	577.74	**(P5)**
Summer gain/loss ratio	3.93	3.72	3.51	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.79	23.48	23.17	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:23

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 68.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F06 04 - Level 6
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.68 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.93 kg/m²	**Fail**

Excess emissions = 2.25 kg/m² (9.5 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	39.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	6.05m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 04 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 21.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	68.4 m²	2.75 m

Living area:	28.9 m² (fraction 0.423)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	29.15	14.13	15.02	0.18	0	False	0
Internal Elements							
Int	165.128						9
Party Elements							
P. Wall	69.025						0
P. Ceiling	68.4						0
Floor	68.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2931

Length	Psi-value		
5.5425	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.5425	0.021	E3	Sill
15.3	0.016	E4	Jamb
10.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
25.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
25.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Low Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 04 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 21.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	142.77	**(P1)**
Transmission heat loss coefficient:	28.7	
Summer heat loss coefficient:	171.48	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W05c)	0.9 x	6.05	81.19	0.38	0.8	0.76	102.8	
						Total	240.1	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	404.82	388.88	396.33	
Total summer gains	664.58	628.98	591.55	**(P5)**
Summer gain/loss ratio	3.88	3.67	3.45	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.85	1.85	1.85	
Threshold temperature	21.72	23.42	23.1	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:23

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 38.8m²
Site Reference : Station Hill - Block F **Plot Reference:** F06 05 - Level 6
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	30.15 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	33.43 kg/m²	**Fail**

Excess emissions = 3.28 kg/m² (10.9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	43.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	38.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	4.04m²
Windows facing: North	6.05m²
Ventilation rate:	2.80
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 05 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 17.74
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	38.8 m²	2.75 m

Living area:	31.4 m² (fraction 0.809)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.05	10.09	6.96	0.18	0	False	0
Internal Elements							
Int	76.5						9
Party Elements							
P. Wall	55.825						0
P. Ceiling	38.8						0
Floor	38.8						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3781

Length	Psi-value		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
4.4	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
20.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
20.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 05 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 17.74
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.8 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	98.59	**(P1)**
Transmission heat loss coefficient:	20.2	
Summer heat loss coefficient:	118.76	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	4.04	81.19	0.38	0.8	0.76	68.65	
North (W05c)	0.9 x	6.05	81.19	0.38	0.8	0.76	102.8	
						Total	171.45	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	277.8	267.34	272.8	
Total summer gains	463.29	438.79	412.2	**(P5)**
Summer gain/loss ratio	3.9	3.69	3.47	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.78	23.47	23.15	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:23

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 74.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F06 06 - Level 6
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.77 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.25 kg/m²	**Fail**

Excess emissions = 1.48 kg/m² (6 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	44.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	40.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	6.84m²
Ventilation rate:	2.00
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 06 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 221.61
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	74.4 m²	2.75 m

Living area:	30.9 m² (fraction 0.415)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W05c	16mm or more	0.8	0.38	1.3	6.84	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W05c		Ext	North	2.3725	2.885

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	52.993	14.92	38.07	0.18	0	False	14
Internal Elements							
Int	168						9
Party Elements							
P. Wall	52.525						20
P. Ceiling	74.4						100
Floor	74.4						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1894

Length	Psi-value		
5.5425	0.013	E2	Other lintels (including other steel lintels)

SAP Input

15.97	0.016	E4	Jamb
27.54	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
5.5425	0.021	E3	Sill
19.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
19.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery
	Number of wet rooms: Kitchen + 2
	Ductwork: Insulation, rigid
	Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating
	Standard tariff
	Fuel: Electricity
	Info Source: SAP Tables
	SAP Table: 424
	In screed above insulation
	Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control
	Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak)
	Water code: 903
	Fuel :Electricity
	Hot water cylinder
	Cylinder volume: 170 litres
	Cylinder insulation: Measured loss, 1.2kWh/day
	Primary pipework insulation: False
	Cylinderstat: True
	Cylinder in heated space: True
	Immersion: Single
	Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 06 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 221.61
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	135.04	**(P1)**
Transmission heat loss coefficient:	35.3	
Summer heat loss coefficient:	170.36	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W05c)	0.9 x	6.84	81.19	0.38	0.8	0.76	116.23	
						Total	253.53	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	427.67	410.74	418.54	
Total summer gains	701.95	664.27	624.67	**(P5)**
Summer gain/loss ratio	4.12	3.9	3.67	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.45	0.45	0.45	
Threshold temperature	20.57	22.25	21.92	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:23

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 73.7m²

Site Reference : Station Hill - Block F

Plot Reference: F06 07 - Level 6

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	21.31 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.88 kg/m²	**Fail**

Excess emissions = 3.57 kg/m² (16.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	31.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	32.1 kWh/m²	**Fail**

Excess energy = 0.53 kg/m² (01.7 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	4.7m²
Windows facing: South	5.19m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 07 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.61
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	73.7 m²	2.75 m

Living area:	31 m² (fraction 0.421)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	2
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.875	9.89	40.99	0.18	0	False	0
Internal Elements							
Int	168.75						9
Party Elements							
P. Wall	52.25						0
P. Ceiling	73.7						0
Floor	73.7						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2074

Length	**Psi-value**		
4.755	0.067	E2	Other lintels (including other steel lintels)

SAP Input

4.755	0.03	E3	Sill
12	0.045	E4	Jamb
27.4	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
19	0	P3	Intermediate floor between dwellings (in blocks of flats)
19	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 2

Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

Conservatory: No conservatory

Low energy lights: 100%

Terrain type: Dense urban

EPC language: English

Wind turbine: No

Assessor's Zero Carbon Home: No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 07 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.61
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	147.14	**(P1)**
Transmission heat loss coefficient:	30.2	
Summer heat loss coefficient:	177.29	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	4.7	112.21	0.38	0.8	0.76	110.38	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	232.27	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	425.92	409.17	417.2	
Total summer gains	666.69	641.44	646.36	**(P5)**
Summer gain/loss ratio	3.76	3.62	3.65	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.62	23.37	23.3	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:23

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 51.4m²

Site Reference : Station Hill - Block F

Plot Reference: F06 08 - Level 6

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.55 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.76 kg/m²	**Fail**

Excess emissions = 4.21 kg/m² (18.7 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	26.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	30.5 kWh/m²	**Fail**

Excess energy = 3.90 kg/m² (14.7 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	2.35m²
Windows facing: South	5.19m²
Ventilation rate:	2.50
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 08 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 16.02
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	51.4 m²	2.75 m

Living area:	29.8 m² (fraction 0.58)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	20.625	7.54	13.09	0.18	0	False	0
Internal Elements							
Int	91.5						9
Party Elements							
P. Wall	62.7						0
P. Ceiling	51.4						0
Floor	51.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3876

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.03	E3	Sill
8.55	0.045	E4	Jamb
8.2	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
22.8	0	P3	Intermediate floor between dwellings (in blocks of flats)
22.8	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 08 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 16.02
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.5 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	116.61	**(P1)**
Transmission heat loss coefficient:	19.7	
Summer heat loss coefficient:	136.28	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	2.35	112.21	0.38	0.8	0.76	55.19	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	177.08	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	332.71	319.92	326.36	
Total summer gains	516.26	497	501.07	**(P5)**
Summer gain/loss ratio	3.79	3.65	3.68	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.68	23.43	23.36	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:23

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 53.4m²

Site Reference : Station Hill - Block F

Plot Reference: F06 09 - Level 6

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.33 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.55 kg/m²	**Fail**

Excess emissions = 4.22 kg/m² (18.9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	26.9 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	30.6 kWh/m²	**Fail**

Excess energy = 3.70 kg/m² (13.8 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	2.35m²
Windows facing: South	5.19m²
Ventilation rate:	2.40
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 09 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 15.17
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	53.4 m²	2.75 m

Living area:	30.6 m² (fraction 0.573)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04c		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	22.825	7.54	15.29	0.18	0	False	0
Internal Elements							
Int	90						9
Party Elements							
P. Wall	64.075						0
P. Ceiling	53.4						0
Floor	53.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3653

Length	**Psi-value**		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.03	E3	Sill
8.55	0.045	E4	Jamb
9.8	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
23.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 09 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 15.17
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.4 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	116.31	**(P1)**
Transmission heat loss coefficient:	20.4	
Summer heat loss coefficient:	136.71	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	2.35	112.21	0.38	0.8	0.76	55.19	
South (W04c)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	177.08	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	341.62	328.46	335.08	
Total summer gains	525.18	505.54	509.79	**(P5)**
Summer gain/loss ratio	3.84	3.7	3.73	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.74	23.49	23.42	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:23

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 58.5m²
Site Reference : Station Hill - Block F **Plot Reference:** F06 10 - Level 6
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	25.04 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.85 kg/m²	**Fail**

Excess emissions = 1.81 kg/m² (7.2 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	39.3 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	38.2 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	2.35m²
Windows facing: East	6.05m²
Ventilation rate:	2.10
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 10 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 221.6
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	58.5 m²	2.75 m

Living area:	33.2 m² (fraction 0.568)
Front of dwelling faces:	West

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	East	1.36	1.725
W05c		Ext	East	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.05	8.4	41.65	0.18	0	False	14
Internal Elements							
Int	107.25						9
Party Elements							
P. Wall	44.275						20
P. Ceiling	58.5						100
Floor	58.5						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1963

Length	**Psi-value**		
3.7325	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.7325	0.03	E3	Sill
8.55	0.045	E4	Jamb
29	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E25	Staggered party wall between dwellings
2.75	0.18	E16	Corner (normal)
16.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
16.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 10 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	West
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 221.6
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.1 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	111.49	**(P1)**
Transmission heat loss coefficient:	27.7	
Summer heat loss coefficient:	139.19	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02a)	0	1
East (W05c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02a)	0.85	0.9	1	0.76	**(P8)**
East (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02a)	0.9 x	2.35	117.51	0.38	0.8	0.76	57.8	
East (W05c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	206.6	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	363.85	349.74	356.7	
Total summer gains	583.16	556.33	538.46	**(P5)**
Summer gain/loss ratio	4.19	4	3.87	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.45	0.45	0.45	
Threshold temperature	20.64	22.35	22.12	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:22

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 82.2m²
Site Reference : Station Hill - Block F **Plot Reference:** F06 11 - Level 6
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.16 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.22 kg/m²	**Fail**

Excess emissions = 2.06 kg/m² (8.9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	41.1 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	34.0 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	2.35m²
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 11 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 17.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	82.2 m²	2.75 m

Living area:	42.5 m² (fraction 0.517)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	East	1.36	1.725
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	82.775	12.44	70.34	0.18	0	False	0
Internal Elements							
Int	161.975						9
Party Elements							
P. Wall	27.885						0
P. Ceiling	82.2						0
Floor	82.2						0

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0703

Length	Psi-value		
1.36	0.067	E2	Other lintels (including other steel lintels)
1.36	0.03	E3	Sill
5.1	0.045	E4	Jamb
19.5	0.14	E7	Party floor between dwellings (in blocks of flats)
3.94	0.013	E2	Other lintels (including other steel lintels)
3.94	0.021	E3	Sill
10.2	0.016	E4	Jamb
10.14	0	P3	Intermediate floor between dwellings (in blocks of flats)
10.14	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 1
Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff
In Smoke Control Area: Unknown
Conservatory: No conservatory
Low energy lights: 100%
Terrain type: Dense urban
EPC language: English

SAP Input

Wind turbine:	No
Passivhaus Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 11 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 17.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	171.57	**(P1)**
Transmission heat loss coefficient:	33.9	
Summer heat loss coefficient:	205.43	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02a)	0	1
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02a)	0.85	0.9	1	0.76	**(P8)**
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02a)	0.9 x	2.35	117.51	0.38	0.8	0.76	57.8	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	305.96	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	455.11	437.04	445.39	
Total summer gains	779.89	743	714.56	**(P5)**
Summer gain/loss ratio	3.8	3.62	3.48	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.67	23.39	23.15	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:22

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 37m²

Site Reference : Station Hill - Block F **Plot Reference:** F06 12 - Level 6

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.5 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	34.97 kg/m²	**Fail**

Excess emissions = 5.47 kg/m² (18.5 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	40.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	40.8 kWh/m²	**Fail**

Excess energy = 0.85 kg/m² (02.1 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	3.50
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 12 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 12.44
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	37 m²	2.75 m

Living area:	30.9 m² (fraction 0.835)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	16.225	10.09	6.14	0.18	0	False	0
Internal Elements							
Int	51.15						9
Party Elements							
P. Wall	55						0
P. Ceiling	37						0
Floor	37						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.4903

Length	Psi-value		
3.9575	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.03	E3	Sill
10.2	0.045	E4	Jamb
11.8	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
20	0	P3	Intermediate floor between dwellings (in blocks of flats)
20	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 12 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 12.44
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.5 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	117.52	**(P1)**
Transmission heat loss coefficient:	21.5	
Summer heat loss coefficient:	139.05	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	270.42	260.28	265.63	
Total summer gains	533.85	508.44	483.95	**(P5)**
Summer gain/loss ratio	3.84	3.66	3.48	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.91	1.91	1.91	
Threshold temperature	21.75	23.47	23.19	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:22

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 43.3m²
Site Reference : Station Hill - Block F **Plot Reference:** F06 13 - Level 6
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.45 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.06 kg/m²	**Fail**

Excess emissions = 0.61 kg/m² (2.3 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	36.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	34.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	3.00
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 13 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 223.21
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	43.3 m²	2.75 m

Living area:	21.7 m² (fraction 0.501)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.7	10.09	8.61	0.18	0	False	14
Internal Elements							
Int	64.35						9
Party Elements							
P. Wall	58.575						20
P. Ceiling	43.3						100
Floor	43.3						80

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.3665			
	Length	**Psi-value**		
	3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.016	E4	Jamb
5.6	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
3.9575	0.021	E3	Sill
21.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
21.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 13 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 223.21
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	117.88	**(P1)**
Transmission heat loss coefficient:	20.9	
Summer heat loss coefficient:	138.76	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	296.84	285.56	291.31	
Total summer gains	560.27	533.72	509.64	**(P5)**
Summer gain/loss ratio	4.04	3.85	3.67	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.44	0.44	0.44	
Threshold temperature	20.48	22.18	21.91	**(P7)**
Likelihood of high internal temperature	**Not significant**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:22

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 44m²

Site Reference : Station Hill - Block F

Plot Reference: F06 14 - Level 6

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.27 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	30.26 kg/m²	**Fail**

Excess emissions = 3.99 kg/m² (15.2 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	36.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.5 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	3.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 14 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 12.96
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	44 m²	2.75 m

Living area:	22 m² (fraction 0.5)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	19.525	10.09	9.43	0.18	0	False	0
Internal Elements							
Int	63.36						9
Party Elements							
P. Wall	57.75						0
P. Ceiling	44						0
Floor	44						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3516

Length	**Psi-value**		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
6.2	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
21	0	P3	Intermediate floor between dwellings (in blocks of flats)
21	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 14 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 12.96
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	127.78	**(P1)**
Transmission heat loss coefficient:	21	
Summer heat loss coefficient:	148.81	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	299.87	288.45	294.25	
Total summer gains	563.29	536.61	512.57	**(P5)**
Summer gain/loss ratio	3.79	3.61	3.44	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.91	1.91	1.91	
Threshold temperature	21.69	23.42	23.15	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:22

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 43.3m²
Site Reference : Station Hill - Block F **Plot Reference:** F06 15 - Level 6
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.5 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	30.67 kg/m²	**Fail**

Excess emissions = 4.17 kg/m² (15.7 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	36.7 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	36.1 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	6.05m²
Ventilation rate:	3.30
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F06 15 - Level 6

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 13.6
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	43.3 m²	2.75 m

Living area:	21.2 m² (fraction 0.49)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W5c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W5c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W5c		Ext	West	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.875	10.09	7.78	0.18	0	False	0
Internal Elements							
Int	65.45						9
Party Elements							
P. Wall	58.575						0
P. Ceiling	43.3						0
Floor	43.3						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.4187

Length	Psi-value		
3.9575	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.9575	0.021	E3	Sill
10.2	0.016	E4	Jamb
6.5	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
23.4	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.4	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F06 15 - Level 6

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 13.6
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	129.67	**(P1)**
Transmission heat loss coefficient:	21.4	
Summer heat loss coefficient:	151.03	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W5c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W5c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W5c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	248.16	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	296.84	285.56	291.31	
Total summer gains	560.27	533.72	509.64	**(P5)**
Summer gain/loss ratio	3.71	3.53	3.37	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.9	1.9	1.9	
Threshold temperature	21.61	23.34	23.08	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:22

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 50.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 01 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.34 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.99 kg/m²	**Fail**

Excess emissions = 3.65 kg/m² (15 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	33.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.2 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	3.00
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 01 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 15.08
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	50.4 m²	2.75 m

Living area:	27.5 m² (fraction 0.546)
Front of dwelling faces:	East

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04c		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.425	9.23	9.19	0.18	0	False	0
Internal Elements							
Int	84.425						9
Party Elements							
P. Wall	64.35						0
P. Ceiling	50.4						0
Floor	50.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.4355

Length	Psi-value		
3.62	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.62	0.03	E3	Sill
10.2	0.045	E4	Jamb
6.7	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
23.4	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.4	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Low Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 01 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 15.08
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	137.21	**(P1)**
Transmission heat loss coefficient:	21.1	
Summer heat loss coefficient:	158.3	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04c)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	327.94	315.31	321.57	
Total summer gains	568.91	542.32	521.28	**(P5)**
Summer gain/loss ratio	3.59	3.43	3.29	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.49	23.22	22.99	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:22

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 80m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 02 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.98 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.29 kg/m²	**Fail**

Excess emissions = 3.31 kg/m² (13.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	44.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	38.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	4.04m²
Windows facing: West	10.38m²
Windows facing: North	5.19m²
Ventilation rate:	2.60
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 02 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 18.59
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	80 m²	2.75 m

Living area:	36.7 m² (fraction 0.459)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04a	16mm or more	0.8	0.38	1.3	5.19	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04a		Ext	West	2.035	2.55
W04c		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	59.4	19.61	39.79	0.18	0	False	0
Internal Elements							
Int	165.275						9
Party Elements							
P. Wall	48.675						0
P. Ceiling	80						0
Floor	80						0

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1845

Length	Psi-value		
7.69	0.067	E2	Other lintels (including other steel lintels)
7.69	0.03	E3	Sill
20.4	0.045	E4	Jamb
27.82	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
17.7	0	P3	Intermediate floor between dwellings (in blocks of flats)
17.7	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 2
Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff
In Smoke Control Area: Unknown
Conservatory: No conservatory
Low energy lights: 100%
Terrain type: Dense urban
EPC language: English

DRAFT

SAP Input

Wind turbine:	No
Passivhaus Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 02 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 18.59
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	188.76	**(P1)**
Transmission heat loss coefficient:	42.4	
Summer heat loss coefficient:	231.12	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
West (W04a)	0	1
North (W04c)	0	1

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Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04a)	0.85	0.9	1	0.76	**(P8)**
North (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	4.04	81.19	0.38	0.8	0.76	68.65	
West (W04a)	0.9 x	10.38	117.51	0.38	0.8	0.76	255.29	
North (W04c)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	412.13	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	447.35	429.56	437.64	
Total summer gains	888.03	841.69	789.77	**(P5)**
Summer gain/loss ratio	3.84	3.64	3.42	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.87	1.87	1.87	
Threshold temperature	21.71	23.41	23.09	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:22

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 67.9m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 03 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.72 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.84 kg/m²	**Fail**

Excess emissions = 1.12 kg/m² (4.7 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	38.8 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	36.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.10
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 03 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 223.16
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	67.9 m²	2.75 m

Living area:	27.5 m² (fraction 0.405)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04d	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04d	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04d		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	31.075	13.27	17.81	0.18	0	False	14
Internal Elements							
Int	145.128						9
Party Elements							
P. Wall	68.75						20
P. Ceiling	67.9						100
Floor	67.9						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3077

Length	Psi-value		
5.205	0.067	E2	Other lintels (including other steel lintels)

SAP Input

15.3	0.045	E4	Jamb
12.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
5.205	0.03	E3	Sill
25	0	P3	Intermediate floor between dwellings (in blocks of flats)
25	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 03 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 223.16
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.1 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	129.4	**(P1)**
Transmission heat loss coefficient:	29.2	
Summer heat loss coefficient:	158.56	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04d)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04d)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04d)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	402.83	386.99	394.4	
Total summer gains	646.78	612.47	577.74	**(P5)**
Summer gain/loss ratio	4.08	3.86	3.64	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.44	0.44	0.44	
Threshold temperature	20.52	22.2	21.88	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:21

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 68.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 04 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.52 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.67 kg/m²	**Fail**

Excess emissions = 2.15 kg/m² (9.1 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	38.3 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	32.9 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 04 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 21.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	68.4 m²	2.75 m

Living area:	28.9 m² (fraction 0.423)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04d	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04d	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04d		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	29.15	13.27	15.88	0.18	0	False	0
Internal Elements							
Int	165.128						9
Party Elements							
P. Wall	69.025						0
P. Ceiling	68.4						0
Floor	68.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2928

Length	Psi-value		
5.205	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.205	0.021	E3	Sill
15.3	0.016	E4	Jamb
10.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
25.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
25.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 04 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 21.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	142.77	**(P1)**
Transmission heat loss coefficient:	27.8	
Summer heat loss coefficient:	170.56	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04d)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04d)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04d)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	404.82	388.88	396.33	
Total summer gains	648.77	614.37	579.67	**(P5)**
Summer gain/loss ratio	3.8	3.6	3.4	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.85	1.85	1.85	
Threshold temperature	21.65	23.35	23.05	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:21

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 38.8m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 05 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.95 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	32.94 kg/m²	**Fail**

Excess emissions = 2.99 kg/m² (10 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	42.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	37.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	4.04m²
Windows facing: North	5.19m²
Ventilation rate:	2.70
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 05 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 17.74
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	38.8 m²	2.75 m

Living area:	31.4 m² (fraction 0.809)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04d	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04d	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04d		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.05	9.23	7.82	0.18	0	False	0
Internal Elements							
Int	76.5						9
Party Elements							
P. Wall	55.825						0
P. Ceiling	38.8						0
Floor	38.8						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3774

Length	Psi-value		
3.62	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.62	0.021	E3	Sill
10.2	0.016	E4	Jamb
4.4	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
20.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
20.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 05 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 17.74
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.7 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	95.07	**(P1)**
Transmission heat loss coefficient:	19.2	
Summer heat loss coefficient:	114.32	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04d)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04d)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	4.04	81.19	0.38	0.8	0.76	68.65	
North (W04d)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	156.84	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	277.8	267.34	272.8	
Total summer gains	447.48	424.18	400.32	**(P5)**
Summer gain/loss ratio	3.91	3.71	3.5	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.79	23.49	23.18	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:21

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 74.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 06 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.51 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.56 kg/m²	**Fail**

Excess emissions = 2.05 kg/m² (8.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	43.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.10
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 06 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.32
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	74.4 m²	2.75 m

Living area:	30.9 m² (fraction 0.415)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04b		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	52.993	13.27	39.72	0.18	0	False	0
Internal Elements							
Int	168						9
Party Elements							
P. Wall	52.525						0
P. Ceiling	74.4						0
Floor	74.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.189

Length	Psi-value		
5.205	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.205	0.021	E3	Sill
15.3	0.016	E4	Jamb
27.54	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
19.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
19.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 06 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.32
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.1 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	141.79	**(P1)**
Transmission heat loss coefficient:	33.6	
Summer heat loss coefficient:	175.35	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04b)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	427.75	410.83	418.65	
Total summer gains	671.7	636.32	601.99	**(P5)**
Summer gain/loss ratio	3.83	3.63	3.43	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.69	23.39	23.09	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:21

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 73.7m²

Site Reference : Station Hill - Block F

Plot Reference: F07 07 - Level 7

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	21.31 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.88 kg/m²	**Fail**

Excess emissions = 3.57 kg/m² (16.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	31.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	32.1 kWh/m²	**Fail**

Excess energy = 0.53 kg/m² (01.7 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	4.7m²
Windows facing: South	5.19m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 07 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.61
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	73.7 m²	2.75 m

Living area:	31 m² (fraction 0.421)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	2
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.875	9.89	40.99	0.18	0	False	0
Internal Elements							
Int	168.75						9
Party Elements							
P. Wall	52.25						0
P. Ceiling	73.7						0
Floor	73.7						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2074

Length	**Psi-value**		
4.755	0.067	E2	Other lintels (including other steel lintels)

SAP Input

4.755	0.03	E3	Sill
12	0.045	E4	Jamb
27.4	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
19	0	P3	Intermediate floor between dwellings (in blocks of flats)
19	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 07 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.61
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	147.14	**(P1)**
Transmission heat loss coefficient:	30.2	
Summer heat loss coefficient:	177.29	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	4.7	112.21	0.38	0.8	0.76	110.38	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	232.27	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	425.92	409.17	417.2	
Total summer gains	666.69	641.44	646.36	**(P5)**
Summer gain/loss ratio	3.76	3.62	3.65	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.62	23.37	23.3	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:21

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 51.4m²

Site Reference : Station Hill - Block F

Plot Reference: F07 08 - Level 7

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.93 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	23.97 kg/m²	**Fail**

Excess emissions = 1.04 kg/m² (4.5 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	27.9 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	30.6 kWh/m²	**Fail**

Excess energy = 2.69 kg/m² (09.6 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	2.35m²
Windows facing: South	5.19m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 08 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 223.98
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	51.4 m²	2.75 m

Living area:	29.8 m² (fraction 0.58)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	20.625	7.54	13.09	0.18	0	False	14
Internal Elements							
Int	91.5						9
Party Elements							
P. Wall	62.7						20
P. Ceiling	51.4						100
Floor	51.4						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.4894

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

8.55	0.045	E4	Jamb
15	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
8.2	0.14	E7	Party floor between dwellings (in blocks of flats)
3.395	0.03	E3	Sill
22.8	0	P3	Intermediate floor between dwellings (in blocks of flats)
22.8	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 08 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 223.98
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	107.28	**(P1)**
Transmission heat loss coefficient:	21.8	
Summer heat loss coefficient:	129.05	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	2.35	112.21	0.38	0.8	0.76	55.19	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	177.08	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	332.71	319.92	326.36	
Total summer gains	516.26	497	501.07	**(P5)**
Summer gain/loss ratio	4	3.85	3.88	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.43	0.43	0.43	
Threshold temperature	20.43	22.18	22.11	**(P7)**
Likelihood of high internal temperature	**Not significant**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:21

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 53.4m²

Site Reference : Station Hill - Block F

Plot Reference: F07 09 - Level 7

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.33 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.55 kg/m²	**Fail**

Excess emissions = 4.22 kg/m² (18.9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	26.9 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	30.6 kWh/m²	**Fail**

Excess energy = 3.70 kg/m² (13.8 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	2.35m²
Windows facing: South	5.19m²
Ventilation rate:	2.40
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 09 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 15.17
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	53.4 m²	2.75 m

Living area:	30.6 m² (fraction 0.573)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04c		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	22.825	7.54	15.29	0.18	0	False	0
Internal Elements							
Int	90						9
Party Elements							
P. Wall	64.075						0
P. Ceiling	53.4						0
Floor	53.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3653

Length	**Psi-value**		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.03	E3	Sill
8.55	0.045	E4	Jamb
9.8	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
23.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 09 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 15.17
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.4 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	116.31	**(P1)**
Transmission heat loss coefficient:	20.4	
Summer heat loss coefficient:	136.71	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	2.35	112.21	0.38	0.8	0.76	55.19	
South (W04c)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	177.08	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	341.62	328.46	335.08	
Total summer gains	525.18	505.54	509.79	**(P5)**
Summer gain/loss ratio	3.84	3.7	3.73	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.74	23.49	23.42	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:21

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 58.5m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 10 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	25.04 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	27.30 kg/m²	**Fail**

Excess emissions = 2.26 kg/m² (9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	39.3 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	37.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	2.35m²
Windows facing: East	6.05m²
Ventilation rate:	2.10
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 10 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 116.5
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	58.5 m²	2.75 m

Living area:	33.2 m² (fraction 0.568)
Front of dwelling faces:	West

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W05c	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	East	1.36	1.725
W05c		Ext	East	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.05	8.4	41.65	0.18	0	False	0
Internal Elements							
Int	107.25						9
Party Elements							
P. Wall	44.275						0
P. Ceiling	58.5						100
Floor	58.5						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1963

Length	Psi-value		
3.7325	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.7325	0.03	E3	Sill
8.55	0.045	E4	Jamb
29	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
5.5	0.12	E25	Staggered party wall between dwellings
16.1	0.24	P4	Roof (insulation at ceiling level)
16.1	0	P3	Intermediate floor between dwellings (in blocks of flats)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 10 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	West
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 116.5
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.1 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	111.49	**(P1)**
Transmission heat loss coefficient:	27.7	
Summer heat loss coefficient:	139.19	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02a)	0	1
East (W05c)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02a)	0.85	0.9	1	0.76	**(P8)**
East (W05c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02a)	0.9 x	2.35	117.51	0.38	0.8	0.76	57.8	
East (W05c)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	206.6	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	363.85	349.74	356.7	
Total summer gains	583.16	556.33	538.46	**(P5)**
Summer gain/loss ratio	4.19	4	3.87	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.18	1.18	1.18	
Threshold temperature	21.37	23.08	22.85	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:21

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 82.2m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 11 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.34 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.54 kg/m²	**Fail**

Excess emissions = 2.2 kg/m² (9.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	41.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	34.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	2.35m²
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 11 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 17.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	82.2 m²	2.75 m

Living area:	42.5 m² (fraction 0.517)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	East	1.36	1.725
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	82.775	11.58	71.2	0.18	0	False	0
Internal Elements							
Int	161.975						9
Party Elements							
P. Wall	27.885						0
P. Ceiling	82.2						0
Floor	82.2						0

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0903

Length	Psi-value		
1.36	0.067	E2	Other lintels (including other steel lintels)
1.36	0.03	E3	Sill
5.1	0.045	E4	Jamb
19.5	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
5.5	0.18	E16	Corner (normal)
3.94	0.013	E2	Other lintels (including other steel lintels)
3.94	0.021	E3	Sill
10.2	0.016	E4	Jamb
10.14	0	P3	Intermediate floor between dwellings (in blocks of flats)
10.14	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 1

Pressure test: 3

DRAFT

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

Conservatory: No conservatory

SAP Input

Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 11 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 17.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	164.11	**(P1)**
Transmission heat loss coefficient:	34.6	
Summer heat loss coefficient:	198.71	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02a)	0	1
West (W03a)	0	1
West (W04b)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02a)	0.85	0.9	1	0.76	**(P8)**
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02a)	0.9 x	2.35	117.51	0.38	0.8	0.76	57.8	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	284.81	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	455.34	437.29	445.72	
Total summer gains	757.67	722.1	696.28	**(P5)**
Summer gain/loss ratio	3.81	3.63	3.5	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.69	23.41	23.18	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:20

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 37m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 12 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.48 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	29.17 kg/m²	**OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	39.9 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	36.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**
Primary pipework insulated:	No primary pipework	

Regulations Compliance Report

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	3.20
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 12 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 224.82
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	37 m²	2.75 m

Living area:	30.9 m² (fraction 0.835)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	16.225	9.23	7	0.18	0	False	14
Internal Elements							
Int	51.15						9
Party Elements							
P. Wall	55						20
P. Ceiling	37						100
Floor	37						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3702

Length	Psi-value		
3.62	0.013	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.016	E4	Jamb
11.8	0.05	E7	Party floor between dwellings (in blocks of flats)
5.5	0.06	E18	Party wall between dwellings
3.62	0.021	E3	Sill
20	0	P3	Intermediate floor between dwellings (in blocks of flats)
20	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 12 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 224.82
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	107.45	**(P1)**
Transmission heat loss coefficient:	18.7	
Summer heat loss coefficient:	126.12	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	270.42	260.28	265.63	
Total summer gains	511.39	487.29	465.34	**(P5)**
Summer gain/loss ratio	4.05	3.86	3.69	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.43	0.43	0.43	
Threshold temperature	20.48	22.19	21.92	**(P7)**
Likelihood of high internal temperature	**Not significant**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:20

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 43.3m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 13 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.27 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	30.11 kg/m²	**Fail**

Excess emissions = 3.84 kg/m² (14.6 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	35.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	34.8 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	3.10
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 13 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 13.38
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	43.3 m²	2.75 m

Living area:	21.7 m² (fraction 0.501)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.7	9.23	9.47	0.18	0	False	0
Internal Elements							
Int	64.35						9
Party Elements							
P. Wall	58.575						0
P. Ceiling	43.3						0
Floor	43.3						0

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.3659			
	Length	**Psi-value**		
	3.62	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.62	0.021	E3	Sill
10.2	0.016	E4	Jamb
5.6	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
21.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
21.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 13 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 13.38
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.1 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	121.81	**(P1)**
Transmission heat loss coefficient:	20	
Summer heat loss coefficient:	141.77	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	296.84	285.56	291.31	
Total summer gains	537.82	512.57	491.03	**(P5)**
Summer gain/loss ratio	3.79	3.62	3.46	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.91	1.91	1.91	
Threshold temperature	21.7	23.42	23.17	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:20

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 44m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 14 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.09 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	29.91 kg/m²	**Fail**

Excess emissions = 3.82 kg/m² (14.6 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	35.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	34.7 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	3.00
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 14 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 12.96
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	44 m²	2.75 m

Living area:	22 m² (fraction 0.5)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	19.525	9.23	10.29	0.18	0	False	0
Internal Elements							
Int	63.36						9
Party Elements							
P. Wall	57.75						0
P. Ceiling	44						0
Floor	44						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3511

Length	Psi-value		
3.62	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.62	0.021	E3	Sill
10.2	0.016	E4	Jamb
6.2	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
21	0	P3	Intermediate floor between dwellings (in blocks of flats)
21	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 14 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 12.96
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	119.79	**(P1)**
Transmission heat loss coefficient:	20.1	
Summer heat loss coefficient:	139.9	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04b)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	299.87	288.45	294.25	
Total summer gains	540.84	515.46	493.97	**(P5)**
Summer gain/loss ratio	3.87	3.68	3.53	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.91	1.91	1.91	
Threshold temperature	21.78	23.49	23.24	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:20

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 43.3m²
Site Reference : Station Hill - Block F **Plot Reference:** F07 15 - Level 7
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.22 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.68 kg/m²	**Fail**

Excess emissions = 0.46 kg/m² (1.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	35.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	33.8 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	2.80
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F07 15 - Level 7

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 223.45
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	43.3 m²	2.75 m

Living area:	21.2 m² (fraction 0.49)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.875	9.23	8.64	0.18	0	False	14
Internal Elements							
Int	65.45						9
Party Elements							
P. Wall	58.575						20
P. Ceiling	43.3						100
Floor	43.3						80

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.3898			
	Length	**Psi-value**		
	3.62	0.013	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.016	E4	Jamb
6.5	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
3.62	0.021	E3	Sill
2.75	0.12	E25	Staggered party wall between dwellings
21.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
21.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as a Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F07 15 - Level 7

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 223.45
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.8 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	110.03	**(P1)**
Transmission heat loss coefficient:	19.9	
Summer heat loss coefficient:	129.96	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	296.84	285.56	291.31	
Total summer gains	537.82	512.57	491.03	**(P5)**
Summer gain/loss ratio	4.14	3.94	3.78	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.44	0.44	0.44	
Threshold temperature	20.57	22.28	22.01	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:20

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 50.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F11 01 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	27.45 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	31.51 kg/m²	**Fail**

Excess emissions = 4.06 kg/m² (14.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	44.1 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	39.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	2.60
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 01 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 15.08
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	50.4 m²	2.75 m

Living area:	27.5 m² (fraction 0.546)
Front of dwelling faces:	East

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.425	9.23	9.19	0.18	0	False	0
Roof	50.4	0	50.4	0.13	0		0
Internal Elements							
Int	84.425						9
Party Elements							
P. Wall	64.35						0
Floor	50.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1345

Length	Psi-value		
3.62	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.62	0.03	E3	Sill
10.2	0.045	E4	Jamb
3.1	0.14	E7	Party floor between dwellings (in blocks of flats)
3.1	0.56	E15	Flat roof with parapet
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
23.4	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.4	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP Input

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 01 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 15.08
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	118.92	**(P1)**
Transmission heat loss coefficient:	28.9	
Summer heat loss coefficient:	147.79	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	327.94	315.31	321.57	
Total summer gains	568.91	542.32	521.28	**(P5)**
Summer gain/loss ratio	3.85	3.67	3.53	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.74	23.46	23.22	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:20

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 80m²
Site Reference : Station Hill - Block F **Plot Reference:** F11 02 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	27.53 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	33.81 kg/m²	**Fail**

Excess emissions = 6.28 kg/m² (22.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	56.2 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	51.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	12.06m²
Windows facing: West	5.19m²
Windows facing: North	15.21m²
Ventilation rate:	3.20
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 02 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 18.59
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	80 m²	2.75 m

Living area:	36.7 m² (fraction 0.459)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
CW11	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
CW10	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
CW11	16mm or more	0.8	0.38	1.3	12.06	1
W04a	16mm or more	0.8	0.38	1.3	5.19	1
CW10	16mm or more	0.8	0.38	1.3	15.21	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
CW11		Ext	West	4.775	2.525
W04a		Ext	West	2.035	2.55
CW10		Ext	North	6.085	2.5

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	59.4	32.46	26.94	0.18	0	False	0
Roof	80	0	80	0.13	0		0
Internal Elements							
Int	165.275						9
Party Elements							
P. Wall	48.675						0
Floor	80						0

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0963

Length	Psi-value		
12.895	0.067	E2	Other lintels (including other steel lintels)
12.895	0.03	E3	Sill
15.15	0.045	E4	Jamb
8.7	0.14	E7	Party floor between dwellings (in blocks of flats)
8.7	0.56	E15	Flat roof with parapet
5.5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
17.7	0	P3	Intermediate floor between dwellings (in blocks of flats)
17.7	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 2
Pressure test: 3

Main heating system:

DRAFT

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff
In Smoke Control Area: Unknown
Conservatory: No conservatory
Low energy lights: 100%
Terrain type: Dense urban
EPC language: English

SAP Input

Wind turbine:	No
Passivhaus Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 02 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 18.59
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	232.32	**(P1)**
Transmission heat loss coefficient:	68.8	
Summer heat loss coefficient:	301.11	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (CW11)	0	1
West (W04a)	0	1
North (CW10)	0	1

DRAFT

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (CW11)	0.85	0.9	1	0.76	**(P8)**
West (W04a)	0.85	0.9	1	0.76	**(P8)**
North (CW10)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (CW11)	0.9 x	12.06	117.51	0.38	0.8	0.76	296.61	
West (W04a)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
North (CW10)	0.9 x	15.21	81.19	0.38	0.8	0.76	258.45	
						Total	682.71	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	447.35	429.56	437.64	
Total summer gains	1177.32	1112.27	1021.04	**(P5)**
Summer gain/loss ratio	3.91	3.69	3.39	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.87	1.87	1.87	
Threshold temperature	21.78	23.46	23.06	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:20

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 67.9m²
Site Reference : Station Hill - Block F **Plot Reference:** F11 03 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.72 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.30 kg/m²	**Fail**

Excess emissions = 0.58 kg/m² (2.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	38.8 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.3 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.10
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 03 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 223.23
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	67.9 m²	2.75 m

Living area:	27.5 m² (fraction 0.405)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04d	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04d	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04d		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	31.075	13.27	17.81	0.18	0	False	14
Internal Elements							
Int	145.698						9
Party Elements							
P. Wall	68.75						20
P. Ceiling	67.9						100
Floor	67.9						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2704

Length	Psi-value		
5.205	0.067	E2	Other lintels (including other steel lintels)

SAP Input

15.3	0.045	E4	Jamb
12.2	0.045	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
5.205	0.03	E3	Sill
25	0	P3	Intermediate floor between dwellings (in blocks of flats)
25	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 03 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 223.23
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.1 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	129.4	**(P1)**
Transmission heat loss coefficient:	28	
Summer heat loss coefficient:	157.41	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04d)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04d)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04d)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	402.83	386.99	394.4	
Total summer gains	646.78	612.47	577.74	**(P5)**
Summer gain/loss ratio	4.11	3.89	3.67	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.44	0.44	0.44	
Threshold temperature	20.55	22.23	21.91	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Slight**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:20

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 68.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F11 04 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	23.52 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	25.63 kg/m²	**Fail**

Excess emissions = 2.11 kg/m² (9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	38.3 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	32.9 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 04 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 21.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	68.4 m²	2.75 m

Living area:	28.9 m² (fraction 0.423)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04d	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04d	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04d		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	29.15	13.27	15.88	0.18	0	False	0
Internal Elements							
Int	165.128						9
Party Elements							
P. Wall	69.025						0
P. Ceiling	68.4						0
Floor	68.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2928

Length	Psi-value		
5.205	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.205	0.021	E3	Sill
15.3	0.016	E4	Jamb
10.2	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
25.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
25.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 04 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 21.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	142.77	**(P1)**
Transmission heat loss coefficient:	27.8	
Summer heat loss coefficient:	170.56	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04d)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04d)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04d)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	404.82	388.88	396.33	
Total summer gains	648.77	614.37	579.67	**(P5)**
Summer gain/loss ratio	3.8	3.6	3.4	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.85	1.85	1.85	
Threshold temperature	21.65	23.35	23.05	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:19

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 38.8m²
Site Reference : Station Hill - Block F **Plot Reference:** F11 05 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.71 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	32.62 kg/m²	**Fail**

Excess emissions = 2.91 kg/m² (9.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	41.7 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	36.9 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	3.47m²
Windows facing: North	5.19m²
Ventilation rate:	2.70
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 05 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 17.74
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	38.8 m²	2.75 m

Living area:	31.4 m² (fraction 0.809)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04d	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W04d	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	North	1.36	2.55
W04d		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.05	8.66	8.39	0.18	0	False	0
Internal Elements							
Int	76.5						9
Party Elements							
P. Wall	55.825						0
P. Ceiling	38.8						0
Floor	38.8						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3769

Length	Psi-value		
3.395	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.021	E3	Sill
10.2	0.016	E4	Jamb
4.4	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
20.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
20.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 05 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 17.74
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.7 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	95.07	**(P1)**
Transmission heat loss coefficient:	18.6	
Summer heat loss coefficient:	113.71	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W02b)	0	1
North (W04d)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W02b)	0.85	0.9	1	0.76	**(P8)**
North (W04d)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W02b)	0.9 x	3.47	81.19	0.38	0.8	0.76	58.96	
North (W04d)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	147.15	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	277.8	267.34	272.8	
Total summer gains	437	414.5	392.45	**(P5)**
Summer gain/loss ratio	3.84	3.65	3.45	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.88	1.88	1.88	
Threshold temperature	21.72	23.42	23.13	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:19

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 74.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F11 06 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	24.51 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.56 kg/m²	**Fail**

Excess emissions = 2.05 kg/m² (8.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	43.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	35.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.10
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 06 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.32
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	74.4 m²	2.75 m

Living area:	30.9 m² (fraction 0.415)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04b		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	52.993	13.27	39.72	0.18	0	False	0
Internal Elements							
Int	168						9
Party Elements							
P. Wall	52.525						0
P. Ceiling	74.4						0
Floor	74.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.189

Length	**Psi-value**		
5.205	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.205	0.021	E3	Sill
15.3	0.016	E4	Jamb
27.54	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
19.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
19.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Low Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 06 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.32
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.1 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	141.79	**(P1)**
Transmission heat loss coefficient:	33.6	
Summer heat loss coefficient:	175.35	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04b)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	427.75	410.83	418.65	
Total summer gains	671.7	636.32	601.99	**(P5)**
Summer gain/loss ratio	3.83	3.63	3.43	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.69	23.39	23.09	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:19

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 73.7m²

Site Reference : Station Hill - Block F

Plot Reference: F11 07 - Level 11

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	21.31 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	24.88 kg/m²	**Fail**

Excess emissions = 3.57 kg/m² (16.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	31.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	32.1 kWh/m²	**Fail**

Excess energy = 0.53 kg/m² (01.7 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	4.7m²
Windows facing: South	5.19m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 07 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.61
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	73.7 m²	2.75 m

Living area:	31 m² (fraction 0.421)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	2
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.875	9.89	40.99	0.18	0	False	0
Internal Elements							
Int	168.75						9
Party Elements							
P. Wall	52.25						0
P. Ceiling	73.7						0
Floor	73.7						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.2074

Length	**Psi-value**		
4.755	0.067	E2	Other lintels (including other steel lintels)

SAP Input

4.755	0.03	E3	Sill
12	0.045	E4	Jamb
27.4	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
19	0	P3	Intermediate floor between dwellings (in blocks of flats)
19	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 07 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.61
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	147.14	**(P1)**
Transmission heat loss coefficient:	30.2	
Summer heat loss coefficient:	177.29	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	4.7	112.21	0.38	0.8	0.76	110.38	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	232.27	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	425.92	409.17	417.2	
Total summer gains	666.69	641.44	646.36	**(P5)**
Summer gain/loss ratio	3.76	3.62	3.65	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.62	23.37	23.3	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:19

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 51.4m²

Site Reference : Station Hill - Block F

Plot Reference: F11 08 - Level 11

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.55 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	22.86 kg/m²	**Fail**

Excess emissions = 0.31 kg/m² (1.4 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	26.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	28.1 kWh/m²	**Fail**

Excess energy = 1.50 kg/m² (05.6 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	2.35m²
Windows facing: South	5.19m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 08 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 223.98
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	51.4 m²	2.75 m

Living area:	29.8 m² (fraction 0.58)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	20.625	7.54	13.09	0.18	0	False	14
Internal Elements							
Int	91.5						9
Party Elements							
P. Wall	62.7						20
P. Ceiling	51.4						100
Floor	51.4						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3876

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.03	E3	Sill
8.55	0.045	E4	Jamb
8.2	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
22.8	0	P3	Intermediate floor between dwellings (in blocks of flats)
22.8	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 08 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 223.98
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	107.28	**(P1)**
Transmission heat loss coefficient:	19.7	
Summer heat loss coefficient:	126.95	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	2.35	112.21	0.38	0.8	0.76	55.19	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	177.08	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	332.71	319.92	326.36	
Total summer gains	516.26	497	501.07	**(P5)**
Summer gain/loss ratio	4.07	3.91	3.95	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	0.43	0.43	0.43	
Threshold temperature	20.5	22.25	22.18	**(P7)**
Likelihood of high internal temperature	**Not significant**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:19

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 53.4m²

Site Reference : Station Hill - Block F

Plot Reference: F11 09 - Level 11

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	22.33 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	26.55 kg/m²	**Fail**

Excess emissions = 4.22 kg/m² (18.9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	26.9 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	30.6 kWh/m²	**Fail**

Excess energy = 3.70 kg/m² (13.8 %)

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	(no roof)		
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	2.35m²
Windows facing: South	5.19m²
Ventilation rate:	2.40
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 09 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 15.17
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	53.4 m²	2.75 m

Living area:	30.6 m² (fraction 0.573)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	22.825	7.54	15.29	0.18	0	False	0
Internal Elements							
Int	90						9
Party Elements							
P. Wall	64.075						0
P. Ceiling	53.4						0
Floor	53.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.3653

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.03	E3	Sill
8.55	0.045	E4	Jamb
9.8	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
23.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 09 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 15.17
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.4 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	116.31	**(P1)**
Transmission heat loss coefficient:	20.4	
Summer heat loss coefficient:	136.71	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	2.35	112.21	0.38	0.8	0.76	55.19	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	177.08	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	341.62	328.46	335.08	
Total summer gains	525.18	505.54	509.79	**(P5)**
Summer gain/loss ratio	3.84	3.7	3.73	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.74	23.49	23.42	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:19

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 58.5m²
Site Reference : Station Hill - Block F **Plot Reference:** F11 10 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	30.25 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	34.09 kg/m²	**Fail**

Excess emissions = 3.84 kg/m² (12.7 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	56.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	46.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	2.35m²
Windows facing: East	6.05m²
Ventilation rate:	2.00
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 10 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 40.64
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	58.5 m²	2.75 m

Living area:	33.2 m² (fraction 0.568)
Front of dwelling faces:	West

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W05b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W05b	16mm or more	0.8	0.38	1.3	6.05	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	East	1.36	1.725
W05b		Ext	East	2.3725	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.05	8.4	41.65	0.18	0	False	0
Roof	58.5	0	58.5	0.13	0		9
Internal Elements							
Int	107.25						9
Party Elements							
P. Wall	44.275						20
Floor	58.5						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1466

Length	Psi-value		
3.7325	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.7325	0.03	E3	Sill
8.55	0.045	E4	Jamb
14.5	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.18	E16	Corner (normal)
14.5	0.56	E15	Flat roof with parapet
5.5	0.12	E25	Staggered party wall between dwellings
16.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
16.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP Input

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 10 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	West
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 40.64
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	106.18	**(P1)**
Transmission heat loss coefficient:	41.4	
Summer heat loss coefficient:	147.58	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02a)	0	1
East (W05b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02a)	0.85	0.9	1	0.76	**(P8)**
East (W05b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02a)	0.9 x	2.35	117.51	0.38	0.8	0.76	57.8	
East (W05b)	0.9 x	6.05	117.51	0.38	0.8	0.76	148.8	
						Total	206.6	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	363.85	349.74	356.7	
Total summer gains	583.16	556.33	538.46	**(P5)**
Summer gain/loss ratio	3.95	3.77	3.65	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.72	1.72	1.72	
Threshold temperature	21.67	23.39	23.16	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:19

Project Information:

Assessed By: ()

Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE

Total Floor Area: 82.2m²

Site Reference : Station Hill - Block F

Plot Reference: F11 11 - Level 11

Address :

Client Details:

Name:

Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	28.97 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	32.71 kg/m²	**Fail**

Excess emissions = 3.74 kg/m² (12.9 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	60.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	51.3 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: East	2.35m²
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	1.60
Blinds/curtains:	Dark-coloured curtain or roller blind Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 11 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 124.52
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	82.2 m²	2.75 m

Living area:	42.5 m² (fraction 0.517)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	East	1.36	1.725
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	51.15	11.58	39.57	0.18	0	False	14
Rainscreen	25.025	0	25.02	0.18	0	False	14
Roof	82.2	0	82.2	0.13	0		9
Internal Elements							
Int	161.975						9
Party Elements							
P. Wall	27.885						20
Floor	82.2						80

Thermal bridges:

SAP Input

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1289

Length	Psi-value		
1.36	0.067	E2	Other lintels (including other steel lintels)
1.36	0.03	E3	Sill
5.1	0.045	E4	Jamb
22.4	0.14	E7	Party floor between dwellings (in blocks of flats)
22.4	0.56	E15	Flat roof with parapet
5.5	0.12	E18	Party wall between dwellings
5.5	0.18	E16	Corner (normal)
3.94	0.013	E2	Other lintels (including other steel lintels)
3.94	0.021	E3	Sill
10.2	0.016	E4	Jamb
10.14	0	P3	Intermediate floor between dwellings (in blocks of flats)
10.14	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 2
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 1

Pressure test: 3

DRAFT

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 170 litres
Cylinder insulation: Measured loss, 1.2kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

SAP Input

Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessed as Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 11 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	Yes
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 124.52
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	1.6 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	119.35	**(P1)**
Transmission heat loss coefficient:	57	
Summer heat loss coefficient:	176.4	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
East (W02a)	0	1
West (W03a)	0	1
West (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
East (W02a)	0.85	0.9	1	0.76	**(P8)**
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

DRAFT

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
East (W02a)	0.9 x	2.35	117.51	0.38	0.8	0.76	57.8	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	284.81	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	455.34	437.29	445.72	
Total summer gains	757.67	722.1	696.28	**(P5)**
Summer gain/loss ratio	4.3	4.09	3.95	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.13	1.13	1.13	
Threshold temperature	21.42	23.12	22.88	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:19

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 37m²
Site Reference : Station Hill - Block F **Plot Reference:** F11 12 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	32.44 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	37.24 kg/m²	**Fail**

Excess emissions = 4.8 kg/m² (14.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	49.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	44.6 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	3.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 12 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 12.44
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	37 m²	2.75 m

Living area:	30.9 m² (fraction 0.835)
Front of dwelling faces:	East

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	16.225	9.23	7	0.18	0	False	0
Roof	37	0	37	0.13	0		0
Internal Elements							
Int	51.15						9
Party Elements							
P. Wall	55						0
Floor	37						0

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.1379

Length	Psi-value		
3.62	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.62	0.021	E3	Sill
10.2	0.016	E4	Jamb
2.28	0.14	E7	Party floor between dwellings (in blocks of flats)
2.28	0.56	E15	Flat roof with parapet
5.5	0.12	E18	Party wall between dwellings
20	0	P3	Intermediate floor between dwellings (in blocks of flats)
20	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

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Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 12 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 12.44
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	3.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	107.45	**(P1)**
Transmission heat loss coefficient:	24.8	
Summer heat loss coefficient:	132.27	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	270.42	260.28	265.63	
Total summer gains	511.39	487.29	465.34	**(P5)**
Summer gain/loss ratio	3.87	3.68	3.52	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.91	1.91	1.91	
Threshold temperature	21.78	23.5	23.23	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:19

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 43.3m²
Site Reference : Station Hill - Block F **Plot Reference:** F11 13 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.42 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	33.72 kg/m²	**Fail**

Excess emissions = 4.3 kg/m² (14.6 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	46.3 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	41.5 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	2.90
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 13 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 13.38
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	43.3 m²	2.75 m

Living area:	21.7 m² (fraction 0.501)
Front of dwelling faces:	East

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	18.7	9.23	9.47	0.18	0	False	0
Roof	43.3	0	43.3	0.13	0		0
Internal Elements							
Int	64.35						9
Party Elements							
P. Wall	58.575						0
Floor	43.3						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1336

Length	Psi-value		
3.62	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.62	0.021	E3	Sill
10.2	0.016	E4	Jamb
3.18	0.14	E7	Party floor between dwellings (in blocks of flats)
5.5	0.12	E18	Party wall between dwellings
3.18	0.56	E15	Flat roof with parapet
21.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
21.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Passivhaus / Low Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 13 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 13.38
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.9 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	113.95	**(P1)**
Transmission heat loss coefficient:	27	
Summer heat loss coefficient:	140.98	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	296.84	285.56	291.31	
Total summer gains	537.82	512.57	491.03	**(P5)**
Summer gain/loss ratio	3.81	3.64	3.48	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.91	1.91	1.91	
Threshold temperature	21.72	23.44	23.19	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:18

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 44m²
Site Reference : Station Hill - Block F **Plot Reference:** F11 14 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.3 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	31.83 kg/m²	**Fail**

Excess emissions = 2.53 kg/m² (8.6 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	46.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	42.8 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	2.50
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 14 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 131.49
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	44 m²	2.75 m

Living area:	22 m² (fraction 0.5)
Front of dwelling faces:	East

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	19.525	9.23	10.29	0.18	0	False	14
Roof	44	0	44	0.13	0		9
Internal Elements							
Int	63.36						9
Party Elements							
P. Wall	57.75						20
Floor	44						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1326

Length	Psi-value		
3.62	0.013	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.016	E4	Jamb
3.48	0.14	E7	Party floor between dwellings (in blocks of flats)
3.48	0.56	E15	Flat roof with parapet
5.5	0.12	E18	Party wall between dwellings
3.62	0.021	E3	Sill
21	0	P3	Intermediate floor between dwellings (in blocks of flats)
21	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 14 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 131.49
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.5 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	99.82	**(P1)**
Transmission heat loss coefficient:	27.4	
Summer heat loss coefficient:	127.23	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	299.87	288.45	294.25	
Total summer gains	540.84	515.46	493.97	**(P5)**
Summer gain/loss ratio	4.25	4.05	3.88	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.08	1.08	1.08	
Threshold temperature	21.33	23.03	22.76	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:18

Project Information:

Assessed By: ()
Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE
Total Floor Area: 43.3m²
Site Reference : Station Hill - Block F
Plot Reference: F11 15 - Level 11
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.24 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	33.50 kg/m²	**Fail**

Excess emissions = 4.26 kg/m² (14.6 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	45.7 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	41.1 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: West	4.04m²
Windows facing: West	5.19m²
Ventilation rate:	2.90
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F11 15 - Level 11

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 13.6
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	43.3 m²	2.75 m

Living area:	21.2 m² (fraction 0.49)
Front of dwelling faces:	East

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	West	1.585	2.55
W04b		Ext	West	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.875	9.23	8.64	0.18	0	False	0
Roof	43.3	0	43.3	0.13	0		0
Internal Elements							
Int	65.45						9
Party Elements							
P. Wall	58.575						0
Floor	43.3						0

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.132			
	Length	**Psi-value**		
	3.62	0.013	E2	Other lintels (including other steel lintels)

SAP Input

3.62	0.021	E3	Sill
10.2	0.016	E4	Jamb
2.88	0.14	E7	Party floor between dwellings (in blocks of flats)
2.88	0.56	E15	Flat roof with parapet
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
21.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
21.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP Input

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F11 15 - Level 11

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 13.6
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.9 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	113.95	**(P1)**
Transmission heat loss coefficient:	26.7	
Summer heat loss coefficient:	140.62	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
West (W03a)	0	1
West (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
West (W03a)	0.85	0.9	1	0.76	**(P8)**
West (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
West (W03a)	0.9 x	4.04	117.51	0.38	0.8	0.76	99.36	
West (W04b)	0.9 x	5.19	117.51	0.38	0.8	0.76	127.65	
						Total	227.01	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	296.84	285.56	291.31	
Total summer gains	537.82	512.57	491.03	**(P5)**
Summer gain/loss ratio	3.82	3.65	3.49	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.9	1.9	1.9	
Threshold temperature	21.73	23.45	23.2	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:18

Project Information:

Assessed By: ()
Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE
Total Floor Area: 67.9m²
Site Reference : Station Hill - Block F
Plot Reference: F12 01 - Level 12
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.47 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	33.04 kg/m²	**Fail**

Excess emissions = 3.57 kg/m² (12.1 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	57.9 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	50.1 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	1.70
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F12 01 - Level 12

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 130.11
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	67.9 m²	2.75 m

Living area:	27.5 m² (fraction 0.405)
Front of dwelling faces:	South

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04c	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04c	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04c		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	29.975	13.27	16.71	0.18	0	False	14
Amenity	21.45	0	21.45	0.18	0.43	False	14
Roof	67.9	0	67.9	0.13	0		9
Internal Elements							
Int	145.698						9
Party Elements							
P. Wall	47.3						20
Floor	67.9						80

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.1293

Length	Psi-value		
5.205	0.067	E2	Other lintels (including other steel lintels)

SAP Input

15.3	0.045	E4	Jamb
13.5	0.14	E7	Party floor between dwellings (in blocks of flats)
13.5	0.56	E15	Flat roof with parapet
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
5.205	0.03	E3	Sill
17.2	0	P3	Intermediate floor between dwellings (in blocks of flats)
17.2	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP Input

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F12 01 - Level 12

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 130.11
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	1.7 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	104.75	**(P1)**
Transmission heat loss coefficient:	47.2	
Summer heat loss coefficient:	152	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04c)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04c)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04c)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	402.83	386.99	394.4	
Total summer gains	646.78	612.47	577.74	**(P5)**
Summer gain/loss ratio	4.26	4.03	3.8	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.09	1.09	1.09	
Threshold temperature	21.34	23.02	22.69	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:18

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 68.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F12 02 - Level 12
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	26.99 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	29.49 kg/m²	**Fail**

Excess emissions = 2.5 kg/m² (9.3 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	49.8 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	39.8 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	2.10
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F12 02 - Level 12

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 21.73
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	68.4 m²	2.75 m

Living area:	28.9 m² (fraction 0.423)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04d	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04d	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04d		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	29.15	13.27	15.88	0.18	0	False	0
Roof	68.4	0	68.4	0.13	0		0
Internal Elements							
Int	165.128						9
Party Elements							
P. Wall	69.025						0
Floor	68.4						0

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.1116

Length	Psi-value		
5.205	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.205	0.021	E3	Sill
15.3	0.016	E4	Jamb
5.4	0.14	E7	Party floor between dwellings (in blocks of flats)
2.75	0.12	E18	Party wall between dwellings
2.75	0.12	E25	Staggered party wall between dwellings
5.4	0.56	E15	Flat roof with parapet
25.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
25.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP Input

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F12 02 - Level 12

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 21.73
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.1 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	130.35	**(P1)**
Transmission heat loss coefficient:	39	
Summer heat loss coefficient:	169.39	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04d)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04d)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04d)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	404.82	388.88	396.33	
Total summer gains	648.77	614.37	579.67	**(P5)**
Summer gain/loss ratio	3.83	3.63	3.42	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.85	1.85	1.85	
Threshold temperature	21.68	23.37	23.07	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:18

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 38.8m²
Site Reference : Station Hill - Block F **Plot Reference:** F12 03 - Level 12
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	33.37 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	35.39 kg/m²	**Fail**

Excess emissions = 2.02 kg/m² (6.1 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	53.5 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	47.7 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	3.47m²
Windows facing: North	5.19m²
Ventilation rate:	2.20
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F12 03 - Level 12

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 138.55
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	38.8 m²	2.75 m

Living area:	31.4 m² (fraction 0.809)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04d	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02b	16mm or more	0.8	0.38	1.3	3.47	1
W04d	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02b		Ext	North	1.36	2.55
W04d		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	17.05	8.66	8.39	0.18	0	False	14
Roof	38.8	0	38.8	0.13	0		9
Internal Elements							
Int	76.5						9
Party Elements							
P. Wall	55.825						20
Floor	38.8						80

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.1391			
	Length	**Psi-value**		
	3.395	0.013	E2	Other lintels (including other steel lintels)

SAP Input

10.2	0.016	E4	Jamb
2.8	0.14	E7	Party floor between dwellings (in blocks of flats)
2.8	0.56	E15	Flat roof with parapet
5.5	0.12	E18	Party wall between dwellings
3.395	0.021	E3	Sill
20.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
20.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 1 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	3
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 145 litres Cylinder insulation: Measured loss, 1.18kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F12 03 - Level 12

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 138.55
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	77.46	**(P1)**
Transmission heat loss coefficient:	25	
Summer heat loss coefficient:	102.49	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W02b)	0	1
North (W04d)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W02b)	0.85	0.9	1	0.76	**(P8)**
North (W04d)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W02b)	0.9 x	3.47	81.19	0.38	0.8	0.76	58.96	
North (W04d)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	147.15	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	277.8	267.34	272.8	
Total summer gains	437	414.5	392.45	**(P5)**
Summer gain/loss ratio	4.26	4.04	3.83	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.03	1.03	1.03	
Threshold temperature	21.29	22.97	22.66	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:18

Project Information:

Assessed By: ()
Building Type: Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE
Total Floor Area: 74.4m²
Site Reference : Station Hill - Block F
Plot Reference: F12 04 - Level 12
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	29.09 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	31.44 kg/m²	**Fail**

Excess emissions = 2.35 kg/m² (8.1 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	58.6 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	44.5 kWh/m²	
		OK

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2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: North	8.08m²
Windows facing: North	5.19m²
Ventilation rate:	1.80
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F12 04 - Level 12

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 20.32
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	74.4 m²	2.75 m

Living area:	30.9 m² (fraction 0.415)
Front of dwelling faces:	South

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Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W03a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W03a	16mm or more	0.8	0.38	1.3	4.04	2
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W03a		Ext	North	1.585	2.55
W04b		Ext	North	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	52.993	13.27	39.72	0.18	0	False	0
Roof	74.4	0	74.4	0.13	0		0
Internal Elements							
Int	168						9
Party Elements							
P. Wall	52.525						0
Floor	74.4						0

Thermal bridges:

Thermal bridges:	User-defined (individual PSI-values) Y-Value = 0.1257

Length	Psi-value		
5.205	0.013	E2	Other lintels (including other steel lintels)

SAP Input

5.205	0.021	E3	Sill
15.3	0.016	E4	Jamb
14.07	0.14	E7	Party floor between dwellings (in blocks of flats)
14.07	0.56	E15	Flat roof with parapet
2.75	0.18	E16	Corner (normal)
5.5	0.12	E18	Party wall between dwellings
19.1	0	P3	Intermediate floor between dwellings (in blocks of flats)
19.1	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP Input

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F12 04 - Level 12

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	South
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 20.32
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	1.8 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	121.53	**(P1)**
Transmission heat loss coefficient:	49.2	
Summer heat loss coefficient:	170.76	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
North (W03a)	0	1
North (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
North (W03a)	0.85	0.9	1	0.76	**(P8)**
North (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
North (W03a)	0.9 x	8.08	81.19	0.38	0.8	0.76	137.3	
North (W04b)	0.9 x	5.19	81.19	0.38	0.8	0.76	88.19	
						Total	225.49	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	427.75	410.83	418.65	
Total summer gains	671.7	636.32	601.99	**(P5)**
Summer gain/loss ratio	3.93	3.73	3.53	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.86	1.86	1.86	
Threshold temperature	21.79	23.48	23.18	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:18

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 73.7m²
Site Reference : Station Hill - Block F **Plot Reference:** F12 05 - Level 12
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	25.72 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	28.93 kg/m²	**Fail**

Excess emissions = 3.21 kg/m² (12.5 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	46.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	43.3 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.20 kWh/day	
	Permitted by DBSCG: 2.03 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.61	
Maximum	1.5	**OK**
MVHR efficiency:	89%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	4.7m²
Windows facing: South	5.19m²
Ventilation rate:	1.80
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F12 05 - Level 12

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 131.57
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	73.7 m²	2.75 m

Living area:	31 m² (fraction 0.421)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
W02a	16mm or more	0.8	0.38	1.3	2.35	2
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	50.875	9.89	40.99	0.18	0	False	14
Roof	73.7	0	73.7	0.13	0		9
Internal Elements							
Int	168.75						9
Party Elements							
P. Wall	52.25						20
Floor	73.7						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1309

Length	**Psi-value**		
4.755	0.067	E2	Other lintels (including other steel lintels)

SAP Input

4.755	0.03	E3	Sill
12	0.045	E4	Jamb
13.7	0.14	E7	Party floor between dwellings (in blocks of flats)
13.7	0.56	E15	Flat roof with parapet
5.5	0.12	E18	Party wall between dwellings
2.75	0.18	E16	Corner (normal)
19	0	P3	Intermediate floor between dwellings (in blocks of flats)
19	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test:	Yes (As designed)
Ventilation:	Balanced with heat recovery Number of wet rooms: Kitchen + 2 Ductwork: Insulation, rigid Approved Installation Scheme: True
Number of chimneys:	0
Number of open flues:	0
Number of fans:	0
Number of passive stacks:	0
Number of sides sheltered:	2
Pressure test:	3

Main heating system:

Main heating system:	Electric underfloor heating Standard tariff Fuel: Electricity Info Source: SAP Tables SAP Table: 424 In screed above insulation Systems with radiators

DRAFT

Main heating Control:

Main heating Control:	Time and temperature zone control Control code: 2706

Secondary heating system:

Secondary heating system:	None

Water heating:

Water heating:	Electric immersion (on-peak or off-peak) Water code: 903 Fuel :Electricity Hot water cylinder Cylinder volume: 170 litres Cylinder insulation: Measured loss, 1.2kWh/day Primary pipework insulation: False Cylinderstat: True Cylinder in heated space: True Immersion: Single Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Dense urban
EPC language:	English
Wind turbine:	No
Assessor's Zero Carbon Home:	No

SAP Input

DRAFT

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F12 05 - Level 12

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 131.57
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	1.8 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	120.39	**(P1)**
Transmission heat loss coefficient:	45.5	
Summer heat loss coefficient:	165.87	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	4.7	112.21	0.38	0.8	0.76	110.38	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	232.27	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	425.92	409.17	417.2	
Total summer gains	666.69	641.44	646.36	**(P5)**
Summer gain/loss ratio	4.02	3.87	3.9	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.08	1.08	1.08	
Threshold temperature	21.1	22.85	22.78	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:18

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 51.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F12 06 - Level 12
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	25.8 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	30.48 kg/m²	**Fail**

Excess emissions = 4.68 kg/m² (18.1 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	37.7 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	37.4 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	2.35m²
Windows facing: South	5.19m²
Ventilation rate:	2.30
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F12 06 - Level 12

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 16.02
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	51.4 m²	2.75 m

Living area:	29.8 m² (fraction 0.58)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	20.625	7.54	13.09	0.18	0	False	0
Roof	51.4	0	51.4	0.13	0		0
Internal Elements							
Int	91.5						9
Party Elements							
P. Wall	62.7						0
Floor	51.4						0

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1349

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

3.395	0.03	E3	Sill
8.55	0.045	E4	Jamb
4.1	0.14	E7	Party floor between dwellings (in blocks of flats)
4.1	0.56	E15	Flat roof with parapet
5.5	0.12	E18	Party wall between dwellings
22.8	0	P3	Intermediate floor between dwellings (in blocks of flats)
22.8	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 1
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0
Number of open flues: 0
Number of fans: 0
Number of passive stacks: 0
Number of sides sheltered: 3
Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 145 litres
Cylinder insulation: Measured loss, 1.18kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff
In Smoke Control Area: Unknown
Conservatory: No conservatory
Low energy lights: 100%
Terrain type: Dense urban
EPC language: English
Wind turbine: No
Assessor Zero Carbon Home: No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F12 06 - Level 12

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 16.02
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2.3 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	107.28	**(P1)**
Transmission heat loss coefficient:	28.1	
Summer heat loss coefficient:	135.36	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	2.35	112.21	0.38	0.8	0.76	55.19	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	177.08	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	332.71	319.92	326.36	
Total summer gains	516.26	497	501.07	**(P5)**
Summer gain/loss ratio	3.81	3.67	3.7	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.89	1.89	1.89	
Threshold temperature	21.7	23.46	23.39	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

DRAFT

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.51
Printed on 01 April 2022 at 09:58:17

Project Information:

Assessed By: () **Building Type:** Flat

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 53.4m²
Site Reference : Station Hill - Block F **Plot Reference:** F12 07 - Level 12
Address :

Client Details:

Name:
Address :

This report covers items included within the SAP calculations.
It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Electricity
Fuel factor: 1.55 (electricity)

Target Carbon Dioxide Emission Rate (TER)	25.69 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	28.22 kg/m²	**Fail**

Excess emissions = 2.53 kg/m² (9.8 %)

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	38.4 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	38.2 kWh/m²	
		OK

DRAFT

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	**OK**
Party wall	0.00 (max. 0.20)	-	**OK**
Floor	(no floor)		
Roof	0.13 (max. 0.20)	0.13 (max. 0.35)	**OK**
Openings	1.30 (max. 2.00)	1.30 (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	3.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system:	Electric underfloor heating - electric In screed above insulation
Secondary heating system:	None

5 Cylinder insulation

Hot water Storage:	Measured cylinder loss: 1.18 kWh/day	
	Permitted by DBSCG: 1.85 kWh/day	**OK**

Regulations Compliance Report

Primary pipework insulated:	No primary pipework	

6 Controls

Space heating controls	Time and temperature zone control	**OK**
Hot water controls:	Cylinderstat	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Continuous supply and extract system		
Specific fan power:	0.63	
Maximum	1.5	**OK**
MVHR efficiency:	90%	
Minimum	70%	**OK**

9 Summertime temperature

Overheating risk (Thames valley):	Medium	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South	2.35m²
Windows facing: South	5.19m²
Ventilation rate:	2.00
Blinds/curtains:	Dark-coloured curtain or roller blind
	Closed 100% of daylight hours

DRAFT

10 Key features

Air permeablility	3.0 m³/m²h
Party Walls U-value	0 W/m²K
Photovoltaic array	

SAP Input

Property Details: F12 07 - Level 12

Address:	
Located in:	England
Region:	Thames valley
UPRN:	
Date of assessment:	08 March 2021
Date of certificate:	01 April 2022
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Calculated 132.17
Water use <= 125 litres/person/day:	True
PCDF Version:	492

Property description:

Dwelling type:	Flat
Detachment:	
Year Completed:	2021

Floor Location:	Floor area:	Storey height:
Floor 0	53.4 m²	2.75 m

Living area:	30.6 m² (fraction 0.573)
Front of dwelling faces:	North

DRAFT

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
W02a	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	
W04b	Manufacturer	Windows	low-E, En = 0.05, soft coat	No	

Name:	Gap:	Frame Factor:	g-value:	U-value:	Area:	No. of Openings:
W02a	16mm or more	0.8	0.38	1.3	2.35	1
W04b	16mm or more	0.8	0.38	1.3	5.19	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
W02a		Ext	South	1.36	1.725
W04b		Ext	South	2.035	2.55

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
Ext	22.825	7.54	15.29	0.18	0	False	14
Roof	53.4	0	53.4	0.13	0		9
Internal Elements							
Int	90						9
Party Elements							
P. Wall	64.075						20
Floor	53.4						80

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.1356

Length	Psi-value		
3.395	0.067	E2	Other lintels (including other steel lintels)

SAP Input

1.36	0.03	E3	Sill
8.55	0.045	E4	Jamb
4.9	0.14	E7	Party floor between dwellings (in blocks of flats)
4.9	0.56	E15	Flat roof with parapet
5.5	0.12	E18	Party wall between dwellings
23.3	0	P3	Intermediate floor between dwellings (in blocks of flats)
23.3	0.24	P4	Roof (insulation at ceiling level)

Ventilation:

Pressure test: Yes (As designed)

Ventilation: Balanced with heat recovery
Number of wet rooms: Kitchen + 1
Ductwork: Insulation, rigid
Approved Installation Scheme: True

Number of chimneys: 0

Number of open flues: 0

Number of fans: 0

Number of passive stacks: 0

Number of sides sheltered: 3

Pressure test: 3

Main heating system:

Main heating system: Electric underfloor heating
Standard tariff
Fuel: Electricity
Info Source: SAP Tables
SAP Table: 424
In screed above insulation
Systems with radiators

DRAFT

Main heating Control:

Main heating Control: Time and temperature zone control
Control code: 2706

Secondary heating system:

Secondary heating system: None

Water heating:

Water heating: Electric immersion (on-peak or off-peak)
Water code: 903
Fuel :Electricity
Hot water cylinder
Cylinder volume: 145 litres
Cylinder insulation: Measured loss, 1.18kWh/day
Primary pipework insulation: False
Cylinderstat: True
Cylinder in heated space: True
Immersion: Single
Solar panel: False

Others:

Electricity tariff: Standard Tariff

In Smoke Control Area: Unknown

Conservatory: No conservatory

Low energy lights: 100%

Terrain type: Dense urban

EPC language: English

Wind turbine: No

Assessed as Zero Carbon Home: No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 01 April 2022

Property Details: F12 07 - Level 12

Dwelling type:	Flat
Located in:	England
Region:	Thames valley
Cross ventilation possible:	No
Number of storeys:	1
Front of dwelling faces:	North
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Calculated 132.17
Night ventilation:	False
Blinds, curtains, shutters:	Dark-coloured curtain or roller blind
Ventilation rate during hot weather (ach):	2 (Trickle vents only)

Overheating Details:

Summer ventilation heat loss coefficient:	96.92	**(P1)**
Transmission heat loss coefficient:	29.3	
Summer heat loss coefficient:	126.27	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South (W02a)	0	1
South (W04b)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South (W02a)	0.85	0.9	1	0.76	**(P8)**
South (W04b)	0.85	0.9	1	0.76	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South (W02a)	0.9 x	2.35	112.21	0.38	0.8	0.76	55.19	
South (W04b)	0.9 x	5.19	112.21	0.38	0.8	0.76	121.89	
						Total	177.08	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	341.62	328.46	335.08	
Total summer gains	525.18	505.54	509.79	**(P5)**
Summer gain/loss ratio	4.16	4	4.04	**(P6)**
Mean summer external temperature (Thames valley)	16	17.9	17.8	
Thermal mass temperature increment	1.07	1.07	1.07	
Threshold temperature	21.23	22.98	22.91	**(P7)**
Likelihood of high internal temperature	**Slight**	**Medium**	**Medium**	

Assessment of likelihood of high internal temperature: Medium

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