

Vistry Group: Countryside Properties (UK) Ltd

Freeks Farm, Burgess Hill

Part O Compliance Checklist – Dynamic Method

AES Sustainability Consultants Ltd

Rev 00

September 2024



Part 1 – Building Details and Declarations

1.1 Building and site details	
Residential building name/number	All applicable units on site
Street	Eastbridge Avenue
Town	Burgess Hill
County	Sussex
Postcode	RH15 8DQ
Proposed building use/type of building	Residential
Are there any security, noise, or pollution issues?	Yes, security issues on GF bedrooms or bedrooms with easily accessible windows.
1.2 Designer's details	
Designer's name	Kostas Anastasakis
Company	AES Sustainability Consultants
Address line 1	4b Tiverton Way
Address line 2	Tiverton
Postcode	EX16 6TG
Telephone number	01884 242050
Email address	info@aessc.co.uk

Revision	Author	Date	Comment
Rev 00	Kostas Anastasakis	11/09/2024	Initial Issue
Rev 01			
Rev 02			
Rev 03			

Part 2 – Design Details

Part 2b – Dynamic Thermal Modelling Method

2b.1 Modelling details	
Dynamic software name and version	IES virtual environment, Version 2022.4.1.0
Weather file location used, including any additional, more extreme weather files	London GTW_DSY1_2020High50_.epw
Number of sample units modelled, including an explanation of why the size/selection has been chosen	The assessment consists of 21 sample units. These units have been chosen to provide a comprehensive representation of the various house type designs and constraints affecting the site. Consideration has been given to: Orientation of the house types on site. The orientation of a given house type has been chosen to test the worst-case scenario in terms of maximum solar gains.
2b.2 Modelled occupancy	
Has the project passed the assessment described in CIBSE's TM59, taking into account the limits detailed in paragraphs 2.5 and 2.6?	YES
Details of the occupancy profiles used	As per TM59 table 2 Additional profiles created for 4 and 5 bedroom living and kitchen areas. Occupancy increased to four and five people respectively. Equipment and lighting loads taken from 3-bedroom kitchen & living templates. Additional profiles created for study rooms. Occupancy assumed as 1 person per study room. Equipment gains assumed as 80W and lighting loads taken from the 1 bedroom kitchen & living templates.
Details of the equipment profiles used	
Details of the opening profiles used	APPENDIX B
2b.3 Modelled overheating mitigation strategy	
Free areas	APPENDIX B
Infiltration and mechanical flow rates	APPENDIX A
Window g-value	APPENDIX B
Shading strategy	APPENDIX A
Mechanical cooling	APPENDIX A
2b.4 Modelling results	
Has the project passed the assessment described in CIBSE's TM59, taking into account the limits detailed in paragraphs 2.5 and 2.6?	YES
What is the overall overheating strategy (i.e. what design features are key to the project passing)?	Natural ventilation through opening windows Additional mechanical ventilation to a select few rooms Reduced glazing G-value

2b.5 Designer's declaration	
Has the building construction proposal been modelled accurately?	YES
Designer's name	Kostas Anastasakis
Designer's organisation	AES Sustainability Consultants
Designer's signature	
Registration number (if applicable)	EES/023840
Date of design	11.09.2024

APPENDIX A – Inputs

Architectural Drawings			
Provider	P+HS architects		
	Drawing number	Revision	Issue Date
Plans	DT Series – HT A-N DT Series – HT P-U Apartments Block 11 209-213 SHARED Apartments Block 11 209-213 SHARED	T1	20.03.2020
Elevations	Elevations Apartments Ph2 Elevations PH2 HT-A 2B4P Elevations PH2 HT-B 3B4P Elevations PH2 HT-D 2B4P Elevations PH2 HT-F 2B4P Elevations PH2 HT-G 3B5P Elevations PH2 HT-H 2B4P Elevations PH2 HT-J 2B4P Elevations PH2 HT-K 2B4P Elevations PH2 HT-L 3B5P Elevations PH2 HT-M 3B5P Elevations PH2 HT-N 3B5P Elevations PH2 HT-P Q 3B5P Elevations PH2 HT-R, S 4B6P Elevations PH2 HT-T, U 4B6P	T1	20.03.2020
Sections	Sections – Apartments Ph2 Sections – House Types	T1	20.03.2020

Building Fabric

Construction Elements	U-value in [W/ m²K]	Kappa in (kJ/m²K)
Ground Floor	0.16	100
External Wall	0.18	9
Main Roofs	0.11	9
Sloping Roofs	0.20	9
Int. Ceiling & Floor	N/A	Varies
Internal Partitions	N/A	9
Windows	1.30	N/A
French doors	1.40	N/A

Natural Ventilation

Natural Ventilation	
Window opening profiles	Appendix B

Thermal Comfort Category

CIBSE TM52 Thermal Comfort Category	Explanation	Modelled within assessment
I	High level of expectation only used for spaces occupied by very sensitive and fragile persons.	☐
II	Normal expectation (for new buildings and renovations).	☒
IV	Values outside the criteria for the above categories (only acceptable for a limited periods).	☐

As per CIBSE TM59 guidance, Category III for existing buildings should not be used for the purposes of overheating assessments and has therefore been excluded from the above table.

Ensuring the Overheating Mitigation Strategy is Usable

Protection from falling	
Windows considered in the overheating assessment that may pose a higher risk of falls from height and can be opened wider than 100mm, meet the minimum requirements for protection from falling within table 3.1 of Approved Document O.	☐
Guarding is to be introduced to all windows not meeting the minimum requirements for protection from falling.	☒
Window handles on windows that open outwards are not more than 650mm from the inside face of the wall when the window is at its maximum openable angle.	☒
Windows do not meet the minimum requirements for protection from falling. Windows are restricted to 100mm of opening.*	☐
Shading Strategy	
The building uses shading devices in the form of external shutters with means of ventilation/reduced g-value glazing/brise soleil/overhangs.	☒
The building does not use any shading devices.	☐
Security	
Windows above canopies and oriel bay roofs are accessible.	☒
Windows above canopies and oriel bay roofs are <u>not</u> accessible. Certification shall be provided by the client to demonstrate that they cannot bear the weight of a person.	☐

*Window restrictors which can be released by key or manually are not suitable for protection from falling. It is the responsibility of others to ensure the window restrictors meet the requirements of BCA Technical Guidance Note 16 and that any conflict with Approved Document Part B (means of escape) and Approved Document Part F (purge ventilation) are accounted for.

Background Ventilation

Background Ventilation	
Proposed Ventilation system	MEV
Maximum airflow required (trickle flow rate)	0.3 l/s/m ²

Modelled Ventilation – habitable rooms

Modelled Ventilation		
Room name	Infiltration rate ACH	Modelled ventilation flow rate* L/s
HT U GF Living	0.2	N/A
HT U GF Kitchen	0.2	N/A
HT U FF Bedroom 4	0.2	N/A
HT U FF Bedroom 3	0.2	N/A
HT U FF Bedroom 2	0.2	N/A
HT U FF Bedroom 1	0.2	N/A
HT T GF Living	0.2	N/A
HT T GF Kitchen	0.2	N/A
HT T FF Bedroom 4	0.2	N/A
HT T FF Bedroom 3	0.2	N/A
HT T FF Bedroom 2	0.2	N/A
HT T FF Bedroom 1	0.2	N/A
HT S SF Bedroom 3	0.2	N/A
HT S SF Bedroom 1	0.2	N/A
HT S GF Living Dining	0.2	N/A
HT S GF Kitchen	0.2	N/A
HT S FF Bedroom 4	0.2	12
HT S FF Bedroom 2	0.2	29
HT R SF Bedroom 3	0.2	N/A
HT R SF Bedroom 1	0.2	N/A
HT R GF Living Dining	0.2	N/A
HT R GF Kitchen	0.2	N/A
HT R FF Bedroom 4	0.2	12

Modelled Ventilation		
Room name	Infiltration rate ACH	Modelled ventilation flow rate* L/s
HT R FF Bedroom 2	0.2	29
HT Q GF Living	0.2	N/A
HT Q GF Kitchen	0.2	N/A
HT Q FF Bedroom 3	0.2	N/A
HT Q FF Bedroom 2	0.2	N/A
HT Q FF Bedroom 1	0.2	N/A
HT P GF Living	0.2	N/A
HT P GF Kitchen	0.2	N/A
HT P FF Bedroom 3	0.2	N/A
HT P FF Bedroom 2	0.2	N/A
HT P FF Bedroom 1	0.2	N/A
HT N GF Living	0.2	N/A
HT N GF Kitchen Dining	0.2	N/A
HT N FF Bedroom 3	0.2	N/A
HT N FF Bedroom 2	0.2	N/A
HT N FF Bedroom 1	0.2	N/A
HT M GF Living	0.2	N/A
HT M GF Kitchen Dining	0.2	N/A
HT M FF Bedroom 3	0.2	N/A
HT M FF Bedroom 2	0.2	N/A
HT M FF Bedroom 1	0.2	N/A
HT L SF Study	0.2	N/A
HT L SF Bedroom 1	0.2	N/A
HT L GF Living Dining	0.2	N/A
HT L GF Kitchen	0.2	N/A
HT L FF Bedroom 3	0.2	N/A
HT L FF Bedroom 2	0.2	33
HT K GF Living Dining	0.2	N/A
HT K GF Kitchen	0.2	N/A

Modelled Ventilation		
Room name	Infiltration rate ACH	Modelled ventilation flow rate* L/s
HT K FF Bedroom 2	0.2	N/A
HT K FF Bedroom 1	0.2	N/A
HT J GF Living Dining	0.2	N/A
HT J GF Kitchen	0.2	N/A
HT J FF Bedroom 2	0.2	N/A
HT J FF Bedroom 1	0.2	N/A
HT H GF Living Dining	0.2	N/A
HT H GF Kitchen	0.2	N/A
HT H FF Bedroom 2	0.2	N/A
HT H FF Bedroom 1	0.2	N/A
HT G GF Living Dining	0.2	N/A
HT G GF Kitchen	0.2	N/A
HT G FF Bedroom 3	0.2	14
HT G FF Bedroom 2	0.2	23
HT G FF Bedroom 1	0.2	N/A
HT F GF Living Dining	0.2	N/A
HT F GF Kitchen	0.2	N/A
HT F FF Bedroom 2	0.2	N/A
HT F FF Bedroom 1	0.2	N/A
HT D GF Living Dining	0.2	N/A
HT D GF Kitchen	0.2	N/A
HT D FF Bedroom 2	0.2	N/A
HT D FF Bedroom 1	0.2	N/A
HT B GF Living Dining	0.2	N/A
HT B GF Kitchen	0.2	N/A
HT B FF Bedroom 3	0.2	N/A
HT B FF Bedroom 2	0.2	N/A
HT B FF Bedroom 1	0.2	N/A
HT A GF Living Dining	0.2	N/A

Modelled Ventilation		
Room name	Infiltration rate ACH	Modelled ventilation flow rate* L/s
HT A GF Kitchen	0.2	N/A
HT A FF Bedroom 2	0.2	N/A
HT A FF Bedroom 1	0.2	N/A
Block 14 SF FT 28 Kitchen Living	0.3	N/A
Block 14 SF FT 28 Bedroom 2	0.3	N/A
Block 14 SF FT 28 Bedroom 1	0.3	N/A
Block 14 SF FT 17 Bedroom 2	0.3	N/A
Block 14 SF FT 17 Bedroom 1	0.3	N/A
Block 14 GF FT 28 Kitchen Living	0.3	N/A
Block 14 GF FT 17 Kitchen Living	0.3	N/A
Block 11 SF FT 16 Kitchen Living	0.3	N/A
Block 11 SF FT 16 Bedroom 2	0.3	N/A
Block 11 SF FT 16 Bedroom 1	0.3	N/A
Block 11 SF FT 6 Kitchen Living	0.3	N/A
Block 11 SF FT 6 Bedroom 1	0.3	N/A
Block 14 SF FT 17 Kitchen Living	0.3	15
Block 11 GF FT 16 Kitchen Living	0.3	15
Block 14 GF FT 28 Bedroom 1	0.3	17
Block 14 GF FT 28 Bedroom 2	0.3	16
Block 14 GF FT 17 Bedroom 1	0.3	23
Block 14 GF FT 17 Bedroom 2	0.3	23
Block 11 GF FT 16 Bedroom 1	0.3	27
Block 11 GF FT 16 Bedroom 2	0.3	27

*Modelled ventilation refers specifically to additional mechanical ventilation to mitigate overheating.

Ventilation strategy

Ventilation strategy	
Modelled ventilation operation	On continuously
Adjacent condition	External air

Ventilation strategy	
Mechanical boost mode	Not modelled

The ventilation strategy described above is a performance requirement only. The full system design, including fan selection, ductwork layouts, attenuation and controls should be carried out by a suitably qualified engineer. AES sustainability consultants are not suitably qualified to comment on the ventilation design and installation.

Mechanical Cooling

Mechanical Cooling	
Mechanical cooling was modelled in the assessment.	☐
Mechanical cooling was not modelled.	☒

APPENDIX B – Modelled Openings

The g-values quoted in this table are the **maximum permissible values**. The actual g-values of glazing must be equal or lower than these values at construction stage to ensure compliance.

Internal doors in habitable rooms are modelled as open during the daytime and closed when the occupants are sleeping, as per TM59 section 3.3.

Opening profile “ADO.Section_26a” references the opening criteria of Building Regulations Approved Document O, pages 8-9, section 2.6 a.

Profile “ADO.Section_26ab” references the opening criteria of Building Regulations Approved Document O, pages 8-9, sections 2.6 a. + 2.6b.

Profile “ADO.Section_26c” references the opening criteria of Building Regulations Approved Document O, pages 8-9, section 2.6 c.

Further details of the precise opening conditions can be found in the Approved Document and CIBSE TM59.

Room name	Window to wall ratio %	Window g-value (EN410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
HT U GF Living	25.38	0.4, 0.4	1.26, 1.26, 0.75, 0.75, 0.51, 0.51, 0.64, 1.57, 1.57, 0.94, 1.8	80.0, 80.0, 0.0, 0.0, 0.0, 0.0, 80.0, 80.0, 100.0	27.9	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, ADO .Section_26a, Internal door open daytime
HT F GF Living Dining	14.25	0.4	1.26, 1.26, 0.51, 0.51, 0.75, 0.75, 1.4	80.0, 80.0, 0.0, 0.0, 0.0, 0.0	9.4	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously, off continuously
HT F GF Kitchen	6.27	0.4	0.99, 1.4, 1.8	80.0, 0.0, 0.0	7.67	ADO.Section_26a, off continuously, off continuously
HT Q GF Living	21.33	0.4, 0.4	1.26, 1.26, 0.51, 0.51, 0.75, 0.75, 0.89, 0.89, 1.8	80.0, 80.0, 0.0, 0.0, 0.0, 80.0, 80.0, 100.0	30.52	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, Internal door open daytime
HT Q GF Kitchen	8.01	0.4, 0.4	2.1, 0.73, 0.89, 0.89, 1.8	0.0, 0.0, 80.0, 80.0, 100.0	19.35	off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, Internal door open daytime
HT H GF Living Dining	16.48	0.4, 0.4	1.26, 1.26, 0.51, 0.51, 0.75, 0.75, 0.81, 1.4	80.0, 80.0, 0.0, 0.0, 0.0, 0.0, 80.0, 0.0	12.33	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously, ADO.Section_26a, off continuously

Room name	Window to wall ratio %	Window g-value (EN410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
HT H GF Kitchen	5.17	0.4	0.81, 1.4, 1.8	80.0, 0.0, 0.0	6.49	ADO.Section_26a, off continuously, off continuously
HT P GF Kitchen	21.68	0.4, 0.4, 0.4	1.26, 1.26, 0.51, 0.51, 0.75, 0.75, 0.98, 0.98, 1.8	80.0, 80.0, 0.0, 0.0, 0.0, 0.0, 80.0, 100.0	30.91	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, Internal door open daytime
HT P GF Living	22.05	0.4, 0.4, 0.4	1.26, 1.26, 0.51, 0.51, 0.75, 0.75, 0.98, 0.98, 1.8	80.0, 80.0, 0.0, 0.0, 0.0, 0.0, 80.0, 100.0	31.82	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, Internal door open daytime
HT T GF Kitchen	9.27	0.4	0.92, 0.92, 1.8	80.0, 80.0, 100.0	24.36	ADO.Section_26a, ADO.Section_26a, Internal door open daytime
HT T GF Living	25.29	0.4, 0.4	0.9, 0.67, 1.57, 1.57, 1.26, 1.26, 0.51, 0.51, 0.75, 0.75, 1.8	80.0, 0.0, 80.0, 80.0, 80.0, 80.0, 0.0, 0.0, 0.0, 0.0, 100.0	27.57	ADO.Section_26a, off continuously, ADO.Section_26a, ADO.Section_26a, ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously, Internal door open daytime
HT K GF Living Dining	19.45	0.4, 0.4	0.75, 0.75, 0.51, 0.51, 1.26, 1.26, 0.92, 0.92, 1.4	0.0, 0.0, 0.0, 0.0, 80.0, 80.0, 80.0, 0.0	16.27	off continuously, off continuously, off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, ADO.Section_26a, ADO.Section_26a, off continuously
HT K GF Kitchen	11.65	0.4	0.92, 0.92, 1.4, 1.8	80.0, 80.0, 0.0, 0.0	14.31	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously
HT L GF Kitchen	7.1	0.4	0.72, 0.72	80.0, 80.0	10.83	ADO.Section_26a, ADO.Section_26a
HT S GF Kitchen	3.78	0.4	0.7, 1.8	80.0, 100.0	23.07	ADO.Section_26a, Internal door open daytime
HT J GF Kitchen	5.75	0.4	0.9, 1.8	80.0, 100.0	33.56	ADO.Section_26a, Internal door open daytime
HT J GF Living Dining	14.14	0.4	0.51, 0.51, 0.75, 0.75, 1.26, 1.26, 1.6	0.0, 0.0, 0.0, 0.0, 80.0, 80.0, 80.0, 0.0	9.26	off continuously, off continuously, off continuously, off continuously, off continuously

Room name	Window to wall ratio %	Window g-value (EN410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
						ADO.Section_26a, ADO.Section_26a, off continuously
HT R GF Kitchen	3.78	0.4	0.7, 1.8	80.0, 100.0	22.8	ADO.Section_26a, Internal door open daytime
HT B GF Kitchen	10.22	0.4	0.8, 0.8	80.0, 80.0	15.52	ADO.Section_26a, ADO.Section_26a
HT D GF Kitchen	13.64	0.4	0.7, 1.8, 1.4	80.0, 0.0, 0.0	5.57	ADO.Section_26a, off continuously, off continuously
HT D GF Living Dining	24.56	0.4	1.26, 1.26, 0.51, 0.51, 0.75, 0.75, 1.6	80.0, 80.0, 0.0, 0.0, 0.0, 0.0	9.45	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously, off continuously
HT G GF Kitchen	6.86	0.4	0.62, 0.62, 1.8	80.0, 80.0, 0.0	6.95	ADO.Section_26a, ADO.Section_26a, off continuously
HT A GF Kitchen	16.26	0.4	0.9	80	9.13	ADO.Section_26a
HT A GF Living Dining	18.92	0.4	1.89, 1.89, 1.6	80.0, 80.0, 0.0	15.62	ADO.Section_26a, ADO.Section_26a, off continuously
HT M GF Living	19.77	0.4	1.57, 1.57, 0.64, 0.64, 0.94, 0.94, 1.8	80.0, 80.0, 0.0, 0.0, 80.0, 80.0, 100.0	34.21	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, Internal door open daytime
HT M GF Kitchen Dining	5.86	0.4	0.59, 0.59, 1.8	80.0, 80.0, 100.0	20.22	ADO.Section_26a, ADO.Section_26a, Internal door open daytime
HT U GF Kitchen	10.17	0.4	0.92, 0.92, 1.8	80.0, 80.0, 0.0	13.12	ADO.Section_26a, ADO.Section_26a, off continuously
Block 11 GF FT 16 Kitchen Living	25.47	0.4, 0.4, 0.4	1.04, 0.64, 1.89, 1.89, 0.99, 0.99, 0.77, 0.44, 1.8	80.0, 0.0, 0.0, 0.0, 80.0, 80.0, 80.0, 100.0	19.57	ADO.Section_26a, off continuously, off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, ADO.Section_26a, off continuously, Internal door open daytime
Block 11 GF FT 16 Bedroom 1	39.44	0.4	0.81, 1.08, 1.47, 1.8	0.0, 80.0, 0.0, 100.0	18.31	off continuously, ADO.Section_26a, off continuously, Internal door; open daytime
Block 11 GF FT 16 Bedroom 2	17.12	0.4	0.81, 1.08, 1.8	0.0, 80.0, 100.0	19.82	off Continuously, ADO.Section_26a, Internal door; open daytime
Block 14 GF FT 17 Kitchen Living	27.09	0.4, 0.4, 0.4	0.99, 0.99, 0.99, 0.77, 1.68, 1.68, 2.1, 1.8	80.0, 80.0, 80.0, 80.0, 0.0, 0.0, 80.0, 100.0	26.21	ADO.Section_26a, ADO.Section_26a, ADO.Section_26a, ADO.Section_26a, ADO.Section_26a

Room name	Window to wall ratio %	Window g-value (EN410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
						off continuously, off continuously, ADO.Section_26a, Internal door open daytime
Block 14 GF FT 17 Bedroom 2	17.12	0.4	0.81, 1.08, 1.8	0.0, 80.0, 100.0	21.54	off continuously, ADO.Section_26a, Internal door; open daytime
Block 14 GF FT 17 Bedroom 1	29.79	0.4	0.81, 1.08, 1.47, 1.8, 1.8	0.0, 80.0, 0.0, 0.0, 100.0	18.77	off continuously, ADO.Section_26a, off continuously, off continuously, Internal door; open daytime
Block 14 GF FT 28 Kitchen Living	44.18	0.4, 0.4	0.81, 0.81, 1.08, 1.08, 1.47, 1.8, 1.68, 1.68, 2.1	0.0, 0.0, 80.0, 80.0, 0.0, 100.0, 0.0, 0.0, 80.0	19.3	off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, off continuously, Internal door open daytime, off continuously, off continuously, ADO.Section_26a
Block 14 GF FT 28 Bedroom 1	21.71	0.4	0.81, 1.08, 1.47, 1.8, 1.8	0.0, 80.0, 0.0, 100.0, 0.0	18.83	off continuously, ADO.Section_26a, off continuously, Internal door; open daytime, off continuously
Block 14 GF FT 28 Bedroom 2	30.29	0.4	0.81, 1.08, 1.8	0.0, 80.0, 100.0	22.02	off continuously, ADO.Section_26a, Internal door; open daytime
Block 14 SF FT 17 Kitchen Living	31.8	0.4, 0.4, 0.4	0.99, 0.99, 1.08, 0.81, 1.47, 2.1, 1.68, 1.68, 1.8	80.0, 80.0, 80.0, 0.0, 0.0, 80.0, 0.0, 0.0, 100.0	24.01	ADO.Section_26ab, ADO.Section_26ab, ADO.Section_26ab, off continuously, off continuously, ADO.Section_26ab, off continuously, off continuously, Internal door open daytime
Block 14 SF FT 17 Bedroom 2	17.12	0.4	1.08, 0.81, 1.8	80.0, 0.0, 100.0	21.54	ADO.Section_26ab, off continuously, Internal door; open daytime
Block 14 SF FT 17 Bedroom 1	29.79	0.4	1.08, 0.81, 1.47, 1.8, 1.8	80.0, 0.0, 0.0, 0.0, 100.0	18.77	ADO.Section_26ab, off continuously, off continuously, off continuously, Internal door; open daytime
Block 14 SF FT 28 Kitchen Living	44.18	0.4, 0.4	1.08, 1.08, 0.81, 0.81, 1.47, 1.8, 1.68, 1.68, 2.1	80.0, 80.0, 0.0, 0.0, 0.0, 100.0, 0.0, 0.0, 80.0	19.3	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, Internal door open daytime, off continuously,

Room name	Window to wall ratio %	Window g-value (EN410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
						off continuously, ADO.Section_26a
Block 14 SF FT 28 Bedroom 1	21.71	0.4	1.08, 0.81, 1.47, 1.8, 1.8	80.0, 0.0, 0.0, 100.0, 0.0	18.83	ADO.Section_26ab, off continuously, off continuously, Internal door; open daytime, off continuously
Block 14 SF FT 28 Bedroom 2	30.29	0.4	1.08, 0.81, 1.8	80.0, 0.0, 100.0	22.02	ADO.Section_26ab, off continuously, Internal door; open daytime
Block 11 SF FT 16 Kitchen Living	25.47	0.4, 0.4, 0.4	1.68, 1.68, 2.1, 0.99, 0.99, 0.77, 0.44, 1.8	0.0, 0.0, 80.0, 80.0, 80.0, 80.0, 0.0, 100.0	23.01	off continuously, off continuously, ADO.Section_26ab, ADO.Section_26ab, ADO.Section_26ab, ADO.Section_26ab, off continuously, Internal door open daytime
Block 11 SF FT 16 Bedroom 1	39.44	0.4	0.81, 1.08, 1.47, 1.8	0.0, 80.0, 0.0, 100.0	18.31	off continuously, ADO.Section_26ab, off continuously, Internal door; open daytime
Block 11 SF FT 16 Bedroom 2	17.12	0.4	0.81, 1.08, 1.8	0.0, 80.0, 100.0	19.82	off continuously, ADO.Section_26ab, Internal door; open daytime
HT F FF Bedroom 1	9.65	0.4	1.3, 1.04, 1.6, 1.8	0.0, 80.0, 0.0, 100.0	19.63	off continuously, ADO.Section_26ab, off continuously, Internal door; open daytime
HT F FF Bedroom 2	12.27	0.4	0.56, 0.56, 0.87, 0.87, 1.8, 1.4	0.0, 0.0, 80.0, 80.0, 100.0, 0.0	25.07	off continuously, off continuously, ADO.Section_26ab, ADO.Section_26a, Internal door; open daytime, off continuously
HT Q FF Bedroom 3	6.51	0.4	0.87, 1.8	80.0, 100.0	33.37	ADO.Section_26ab, Internal door; open daytime
HT Q FF Bedroom 1	24.01	0.4, 0.4	0.87, 0.56, 0.56, 0.87, 0.87, 1.8, 1.8	80.0, 0.0, 0.0, 80.0, 80.0, 0.0, 100.0	32.16	ADO.Section_26ab, off continuously, off continuously, ADO.Section_26ab, ADO.Section_26ab, off continuously, Internal door; open daytime
HT Q FF Bedroom 2	17.98	0.4	0.56, 0.56, 0.87, 0.87, 1.8	0.0, 0.0, 80.0, 80.0, 100.0	26.31	off continuously, off continuously, ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT H FF Bedroom 2	32.29	0.4, 0.4	0.68, 0.96, 1.64, 1.03, 0.68, 0.96, 1.64, 1.4, 1.8	0.0, 80.0, 0.0, 80.0, 0.0, 80.0, 0.0, 0.0, 100.0	32.4	off continuously, ADO.Section_26ab, off continuously, ADO.Section_26a,

Room name	Window to wall ratio %	Window g-value (EN410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
						off continuously, ADO.Section_26ab, off continuously, off continuously, Internal door; open daytime
HT H FF Bedroom 1	14.17	0.4, 0.4	0.72, 1.12, 1.6, 1.12, 0.72, 1.8	0.0, 80.0, 0.0, 80.0, 0.0, 100.0	25.53	off continuously, ADO.Section_26ab, off continuously, ADO.Section_26ab, off continuously, Internal door; open daytime
HT P FF Bedroom 2	17.98	0.4	0.87, 0.87, 0.56, 0.56, 1.8	80.0, 80.0, 0.0, 0.0, 100.0	26.31	ADO.Section_26ab, ADO.Section_26ab, off continuously, off continuously, Internal door; open daytime
HT P FF Bedroom 1	18.26	0.4	0.87, 0.87, 0.56, 0.56, 1.8, 1.8	80.0, 80.0, 0.0, 0.0, 100.0, 0.0	26.1	ADO.Section_26ab, ADO.Section_26ab, off continuously, off continuously, Internal door; open daytime, off continuously
HT P FF Bedroom 3	10.58	0.4	0.87, 0.56, 1.8	80.0, 0.0, 100.0	32.89	ADO.Section_26ab, off continuously, Internal door; open daytime
HT T FF Bedroom 2	10.55	0.4	0.88, 0.88, 1.8	80.0, 80.0, 100.0	25.98	ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT T FF Bedroom 4	11.89	0.4	0.92, 0.92, 1.8	80.0, 80.0, 100.0	33.7	ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT T FF Bedroom 1	31.6	0.4, 0.4	1.64, 0.88, 0.76, 0.92, 0.92, 1.6, 1.8	0.0, 80.0, 0.0, 80.0, 80.0, 0.0, 100.0	28.65	off continuously, ADO.Section_26ab, off continuously, ADO.Section_26ab, ADO.Section_26ab, off continuously, Internal door; open daytime
HT T FF Bedroom 3	11.11	0.4	0.92, 0.92, 1.8	80.0, 80.0, 100.0	27.5	ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT K FF Bedroom 2	11.91	0.4	0.54, 1.39, 0.85, 1.4, 1.8	0.0, 0.0, 80.0, 0.0, 100.0	19.54	off continuously, off continuously, ADO.Section_26ab, off continuously, Internal door; open daytime
HT K FF Bedroom 1	9.65	0.4	1.04, 1.3, 1.6, 1.8	80.0, 0.0, 0.0, 100.0	19.53	ADO.Section_26ab, off continuously, off continuously, Internal door; open daytime
HT N FF Bedroom 3	12.6	0.4	0.72, 1.12, 1.8	0.0, 80.0, 100.0	29.5	off continuously, ADO.Section_26ab, Internal door;

Room name	Window to wall ratio %	Window g-value (EN410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
						open daytime
HT N FF Bedroom 2	20.86	0.4, 0.4	0.87, 0.96, 0.68, 1.64, 1.8	80.0, 80.0, 0.0, 0.0, 100.0	19.43	ADO.Section_26ab, ADO.Section_26ab, off continuously, off continuously, Internal door; open daytime
HT N FF Bedroom 1	8.79	0.4	0.87, 0.87, 1.8	80.0, 80.0, 100.0	20.01	ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT L FF Bedroom 3	12.99	0.4	0.59, 0.84, 1.84, 1.8	0.0, 80.0, 0.0, 100.0	22.8	off continuously, ADO.Section_26ab, off continuously, Internal door; open daytime
HT L FF Bedroom 2	5.86	0.4	0.72, 0.72, 1.8	80.0, 80.0, 100.0	22.76	ADO.Section_26a, ADO.Section_26a, Internal door; open daytime
HT S FF Bedroom 4	6.3	0.4	0.85, 1.8	80.0, 100.0	39.94	ADO.Section_26a, Internal door; open daytime
HT S FF Bedroom 2	10.48	0.4	0.85, 0.85, 0.85, 1.8, 1.4	80.0, 80.0, 80.0, 100.0, 0.0	26.34	ADO.Section_26a, ADO.Section_26a, ADO.Section_26a, Internal door; open daytime, off continuously
HT J FF Bedroom 2	12.2	0.4	0.87, 0.87, 0.56, 0.56, 1.4, 1.8	80.0, 80.0, 0.0, 0.0, 0.0, 100.0	24.86	ADO.Section_26ab, ADO.Section_26a, off continuously, off continuously, off continuously, Internal door; open daytime
HT J FF Bedroom 1	9.65	0.4	1.04, 1.3, 1.6, 1.8	80.0, 0.0, 0.0, 100.0	19.53	ADO.Section_26ab, off continuously, off continuously, Internal door; open daytime
HT R FF Bedroom 4	6.36	0.4	0.85, 1.8	80.0, 100.0	40.66	ADO.Section_26a, Internal door; open daytime
HT R FF Bedroom 2	10.68	0.4	1.4, 0.85, 0.85, 0.85, 1.8	0.0, 80.0, 80.0, 80.0, 100.0	26.93	off continuously, ADO.Section_26a, ADO.Section_26a, ADO .Section_26a, Internal door; open daytime
HT B FF Bedroom 2	10.15	0.4	0.72, 0.72, 1.8	80.0, 80.0, 100.0	34.01	ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT B FF Bedroom 3	11.2	0.4	0.72, 0.72, 1.8	80.0, 80.0, 100.0	42.29	ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT B FF Bedroom 1	21.52	0.4	0.96, 0.68, 1.64, 1.6, 1.8	80.0, 0.0, 0.0, 0.0, 100.0	21.08	ADO.Section_26ab, off continuously, off continuously,

Room name	Window to wall ratio %	Window g-value (EN410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
						off continuously, Internal door; open daytime
HT D FF Bedroom 2	15.66	0.4	0.8, 1.12, 0.72, 1.4, 1.8	80.0, 80.0, 0.0, 0.0, 100.0	26.21	ADO.Section_26ab, ADO.Section_26a, off continuously, off continuously, Internal door; open daytime
HT D FF Bedroom 1	10.38	0.4	0.98, 0.98, 1.6, 1.8	80.0, 80.0, 0.0, 100.0	24.87	ADO.Section_26ab, ADO.Section_26ab, off continuously, Internal door; open daytime
HT G FF Bedroom 2	11.16	0.4	0.72, 0.72, 1.8	80.0, 80.0, 100.0	30.12	ADO.Section_26a, ADO.Section_26a, Internal door; open daytime
HT G FF Bedroom 3	13.36	0.4	0.72, 0.72, 1.8	80.0, 80.0, 100.0	45	ADO.Section_26a, ADO.Section_26a, Internal door; open daytime
HT G FF Bedroom 1	15.74	0.4	0.85, 0.85, 0.85, 1.6, 1.8	80.0, 0.0, 80.0, 0.0, 100.0	23.27	ADO.Section_26ab, off continuously, ADO.Section_26ab, off continuously, Internal door; open daytime
HT A FF Bedroom 1	12.75	0.4	1.04, 1.3, 1.8	80.0, 0.0, 100.0	18.27	ADO.Section_26ab, off continuously, Internal door; open daytime
HT A FF Bedroom 2	17.11	0.4	0.86, 0.86, 0.86, 1.4, 1.8	80.0, 0.0, 80.0, 0.0, 100.0	27.01	ADO.Section_26ab, off continuously, ADO.Section_26a, off continuously, Internal door; open daytime
HT M FF Bedroom 1	12.95	0.4	0.78, 0.78, 0.78, 1.8	0.0, 80.0, 80.0, 100.0	22.92	off continuously, ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT M FF Bedroom 2	7.99	0.4	0.72, 0.72, 1.8	80.0, 80.0, 100.0	22.43	ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT M FF Bedroom 3	5.78	0.4	0.8, 1.8	80.0, 100.0	30.81	ADO.Section_26ab, Internal door; open daytime
HT U FF Bedroom 3	11.19	0.4	0.92, 0.92, 1.8	80.0, 80.0, 100.0	27.89	ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT U FF Bedroom 1	20.4	0.4	0.96, 0.68, 1.64, 1.6, 1.8	80.0, 0.0, 0.0, 0.0, 100.0	18.65	ADO.Section_26ab, off continuously, off continuously, off continuously, Internal door; open daytime
HT U FF Bedroom 2	14.17	0.4	0.78, 0.78, 0.78, 1.8	0.0, 80.0, 80.0, 100.0	24.94	off continuously, ADO.Section_26ab, ADO.Section_26ab,

Room name	Window to wall ratio %	Window g-value (EN410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
						Internal door; open daytime
HT U FF Bedroom 4	11.89	0.4	0.92, 0.92, 1.8	80.0, 80.0, 100.0	33.73	ADO.Section_26ab, ADO.Section_26ab, Internal door; open daytime
HT L SF Study	6.48	0.4	0.72, 0.72, 1.4, 1.8	80.0, 80.0, 0.0, 100.0	27.8	ADO.Section_26a, ADO.Section_26a, off continuously, Internal door open daytime
HT L SF Bedroom 1	12.71	0.4	0.59, 0.84, 1.84, 1.6, 1.8	0.0, 80.0, 0.0, 0.0, 100.0	15.43	off continuously, ADO.Section_26ab, off continuously, off continuously, Internal door; open daytime
HT S SF Bedroom 1	9.2	0.4	0.85, 0.85, 0.85, 1.6, 1.8	80.0, 80.0, 80.0, 0.0, 100.0	24.62	ADO.Section_26ab, ADO.Section_26ab, ADO.Section_26ab, off continuously, Internal door; open daytime
HT S SF Bedroom 3	11.88	0.4	0.85, 0.72, 1.12, 1.8	80.0, 100.0, 80.0, 0.0	18.49	ADO.Section_26ab, Internal door; open daytime, ADO. Section_26ab, off continuously
HT R SF Bedroom 3	11.95	0.4	0.85, 0.72, 1.12, 1.6	80.0, 0.0, 80.0, 100.0	25.78	ADO.Section_26ab, off continuously, ADO.Section_26ab, Internal door; open daytime
HT R SF Bedroom 1	9.36	0.4	0.85, 0.85, 0.85, 1.6, 1.8	80.0, 80.0, 80.0, 0.0, 100.0	25.23	ADO.Section_26ab, ADO.Section_26ab, ADO.Section_26ab, off continuously, Internal door; open daytime
Block 11 SF FT 6 Kitchen Living	20.06	0.4, 0.4	1.68, 1.68, 2.1, 0.99, 1.8	0.0, 0.0, 80.0, 80.0, 100.0	18.9	off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, Internal door open daytime
Block 11 SF FT 6 Bedroom 1	23.93	0.4	1.47, 1.08, 0.81, 1.8	0.0, 80.0, 0.0, 100.0	18.96	off continuously, ADO.Section_26ab, off continuously, Internal door; open daytime
HT N GF Living	15.77	0.4	0.94, 0.64, 1.57	80.0, 0.0, 80.0	15.06	ADO.Section_26a, off continuously, ADO.Section_26a
HT N GF Kitchen Dining	19.19	0.4, 0.4	0.92, 0.92, 1.8, 0.84, 0.94, 0.64, 1.57	80.0, 80.0, 100.0, 80.0, 80.0, 0.0, 80.0	26.92	ADO.Section_26a, ADO.Section_26a, Internal door open daytime, ADO.Section_26a, ADO.Section_26a, off continuously, ADO.Section_26a
HT L GF Living Dining	12.64	0.4, 0.4	1.26, 1.26, 0.51, 0.51, 0.75, 0.75,	80.0, 80.0, 0.0, 0.0, 0.0,	16.13	ADO.Section_26a, ADO.Section_26a,

Room name	Window to wall ratio %	Window g-value (EN410)	Opening gross area m²	Opening free area (avg) %	Opening free area / floor area ratio %	Opening profile(s)
			1.4, 1.8, 0.8, 0.8	0.0, 0.0, 100.0, 0.0, 0.0		off continuously, off continuously, off continuously, off continuously, Internal door open daytime, off continuously, off continuously
HT S GF Living Dining	12.06	0.4, 0.4, 0.4	1.26, 1.26, 0.75, 0.75, 0.51, 0.51, 1.6, 1.8, 0.8, 0.8	80.0, 80.0, 0.0, 0.0, 0.0, 0.0, 100.0, 80.0, 80.0	21.07	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously, off continuously, Internal door open daytime, ADO.Section_26a, ADO.Section_26a
HT R GF Living Dining	11.91	0.4, 0.4	1.26, 1.26, 0.51, 0.51, 0.75, 0.75, 1.6, 1.8, 0.8, 0.8	80.0, 80.0, 0.0, 0.0, 0.0, 0.0, 100.0, 80.0, 80.0	20.56	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously, off continuously, Internal door open daytime, ADO.Section_26a, ADO.Section_26a
HT G GF Living Dining	12.85	0.4, 0.4	1.57, 1.57, 0.94, 0.94, 0.64, 0.64, 1.4, 0.8, 0.8	80.0, 80.0, 80.0, 80.0, 0.0, 0.0, 0.0, 0.0, 0.0	12.01	ADO.Section_26a, ADO.Section_26a, ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, off continuously, off continuously
HT B GF Living Dining	18.16	0.4	1.57, 1.57, 0.64, 0.64, 0.94, 0.94, 1.4	80.0, 80.0, 0.0, 0.0, 80.0, 80.0, 0.0	16.92	ADO.Section_26a, ADO.Section_26a, off continuously, off continuously, ADO.Section_26a, ADO.Section_26a, off continuously

APPENDIX C – Results

Naturally ventilated rooms – criterion (a)

Criterion (a) states that for living rooms, kitchens and bedrooms, the number of hours during which ΔT is greater than or equal to 1K from May to September (or November to March for southern hemisphere locations) shall not exceed 3% of occupied hours.

Room name	Occupied hours	No. occupied hours $\Delta T \geq 1^\circ\text{K}$	% Occupied hours $\Delta T \geq 1^\circ\text{K}$	Criterion (a) check
HT U GF Living	1989	39	2	Pass
HT F GF Living Dining	1989	27	1.4	Pass
HT F GF Kitchen	1989	26	1.3	Pass
HT Q GF Living	1989	36	1.8	Pass
HT Q GF Kitchen	1989	29	1.5	Pass
HT H GF Living Dining	1989	46	2.3	Pass
HT H GF Kitchen	1989	30	1.5	Pass
HT P GF Kitchen	1989	57	2.9	Pass
HT P GF Living	1989	58	2.9	Pass
HT T GF Kitchen	1989	39	2	Pass
HT T GF Living	1989	45	2.3	Pass
HT K GF Living Dining	1989	46	2.3	Pass
HT K GF Kitchen	1989	35	1.8	Pass
HT L GF Kitchen	1989	38	1.9	Pass
HT S GF Kitchen	1989	32	1.6	Pass
HT J GF Kitchen	1989	34	1.7	Pass
HT J GF Living Dining	1989	32	1.6	Pass
HT R GF Kitchen	1989	37	1.9	Pass
HT B GF Kitchen	1989	10	0.5	Pass
HT D GF Kitchen	1989	26	1.3	Pass
HT D GF Living Dining	1989	40	2	Pass
HT G GF Kitchen	1989	25	1.3	Pass
HT A GF Kitchen	1989	31	1.6	Pass
HT A GF Living Dining	1989	40	2	Pass
HT M GF Living	1989	45	2.3	Pass
HT M GF Kitchen Dining	1989	24	1.2	Pass
HT U GF Kitchen	1989	33	1.7	Pass

Room name	Occupied hours	No. occupied hours $\Delta T \geq 1^\circ\text{K}$	% Occupied hours $\Delta T \geq 1^\circ\text{K}$	Criterion (a) check
Block 11 GF FT 16 Kitchen Living	1989	53	2.7	Pass
Block 11 GF FT 16 Bedroom 1	3672	32	0.9	Pass
Block 11 GF FT 16 Bedroom 2	3672	26	0.7	Pass
Block 14 GF FT 17 Kitchen Living	1989	53	2.7	Pass
Block 14 GF FT 17 Bedroom 2	3672	23	0.6	Pass
Block 14 GF FT 17 Bedroom 1	3672	28	0.8	Pass
Block 14 GF FT 28 Kitchen Living	1989	42	2.1	Pass
Block 14 GF FT 28 Bedroom 1	3672	13	0.4	Pass
Block 14 GF FT 28 Bedroom 2	3672	8	0.2	Pass
Block 14 SF FT 17 Kitchen Living	1989	60	3	Pass
Block 14 SF FT 17 Bedroom 2	3672	37	1	Pass
Block 14 SF FT 17 Bedroom 1	3672	44	1.2	Pass
Block 14 SF FT 28 Kitchen Living	1989	50	2.5	Pass
Block 14 SF FT 28 Bedroom 1	3672	24	0.7	Pass
Block 14 SF FT 28 Bedroom 2	3672	22	0.6	Pass
Block 11 SF FT 16 Kitchen Living	1989	53	2.7	Pass
Block 11 SF FT 16 Bedroom 1	3672	50	1.4	Pass
Block 11 SF FT 16 Bedroom 2	3672	40	1.1	Pass
HT F FF Bedroom 1	3672	26	0.7	Pass
HT F FF Bedroom 2	3672	26	0.7	Pass
HT Q FF Bedroom 3	3672	37	1	Pass
HT Q FF Bedroom 1	3672	33	0.9	Pass
HT Q FF Bedroom 2	3672	28	0.8	Pass
HT H FF Bedroom 2	3672	53	1.4	Pass
HT H FF Bedroom 1	3672	41	1.1	Pass
HT P FF Bedroom 2	3672	31	0.8	Pass
HT P FF Bedroom 1	3672	34	0.9	Pass
HT P FF Bedroom 3	3672	50	1.4	Pass
HT T FF Bedroom 2	3672	25	0.7	Pass
HT T FF Bedroom 4	3672	37	1	Pass
HT T FF Bedroom 1	3672	32	0.9	Pass

Room name	Occupied hours	No. occupied hours $\Delta T \geq 1^\circ\text{K}$	% Occupied hours $\Delta T \geq 1^\circ\text{K}$	Criterion (a) check
HT T FF Bedroom 3	3672	37	1	Pass
HT K FF Bedroom 2	3672	30	0.8	Pass
HT K FF Bedroom 1	3672	39	1.1	Pass
HT N FF Bedroom 3	3672	27	0.7	Pass
HT N FF Bedroom 2	3672	28	0.8	Pass
HT N FF Bedroom 1	3672	24	0.7	Pass
HT L FF Bedroom 3	3672	44	1.2	Pass
HT L FF Bedroom 2	3672	31	0.8	Pass
HT S FF Bedroom 4	3672	37	1	Pass
HT S FF Bedroom 2	3672	30	0.8	Pass
HT J FF Bedroom 2	3672	38	1	Pass
HT J FF Bedroom 1	3672	28	0.8	Pass
HT R FF Bedroom 4	3672	43	1.2	Pass
HT R FF Bedroom 2	3672	32	0.9	Pass
HT B FF Bedroom 2	3672	43	1.2	Pass
HT B FF Bedroom 3	3672	48	1.3	Pass
HT B FF Bedroom 1	3672	25	0.7	Pass
HT D FF Bedroom 2	3672	24	0.7	Pass
HT D FF Bedroom 1	3672	32	0.9	Pass
HT G FF Bedroom 2	3672	27	0.7	Pass
HT G FF Bedroom 3	3672	36	1	Pass
HT G FF Bedroom 1	3672	30	0.8	Pass
HT A FF Bedroom 1	3672	39	1.1	Pass
HT A FF Bedroom 2	3672	28	0.8	Pass
HT M FF Bedroom 1	3672	26	0.7	Pass
HT M FF Bedroom 2	3672	27	0.7	Pass
HT M FF Bedroom 3	3672	29	0.8	Pass
HT U FF Bedroom 3	3672	29	0.8	Pass
HT U FF Bedroom 1	3672	32	0.9	Pass
HT U FF Bedroom 2	3672	33	0.9	Pass
HT U FF Bedroom 4	3672	31	0.8	Pass

Room name	Occupied hours	No. occupied hours $\Delta T \geq 1^\circ\text{K}$	% Occupied hours $\Delta T \geq 1^\circ\text{K}$	Criterion (a) check
HT L SF Study	1989	31	1.6	Pass
HT L SF Bedroom 1	3672	35	1	Pass
HT S SF Bedroom 1	3672	25	0.7	Pass
HT S SF Bedroom 3	3672	44	1.2	Pass
HT R SF Bedroom 3	3672	42	1.1	Pass
HT R SF Bedroom 1	3672	25	0.7	Pass
Block 11 SF FT 6 Kitchen Living	1989	53	2.7	Pass
Block 11 SF FT 6 Bedroom 1	3672	52	1.4	Pass
HT N GF Living	1989	38	1.9	Pass
HT N GF Kitchen Dining	1989	33	1.7	Pass
HT L GF Living Dining	1989	46	2.3	Pass
HT S GF Living Dining	1989	50	2.5	Pass
HT R GF Living Dining	1989	47	2.4	Pass
HT G GF Living Dining	1989	28	1.4	Pass
HT B GF Living Dining	1989	18	0.9	Pass

Naturally ventilated rooms – criterion (b)

Criterion (b) states that the operative temperature of the bedrooms from 22:00-07:00 shall not exceed 26°C for more than 1% of annual hours (33 hours is therefore recorded as a failure).

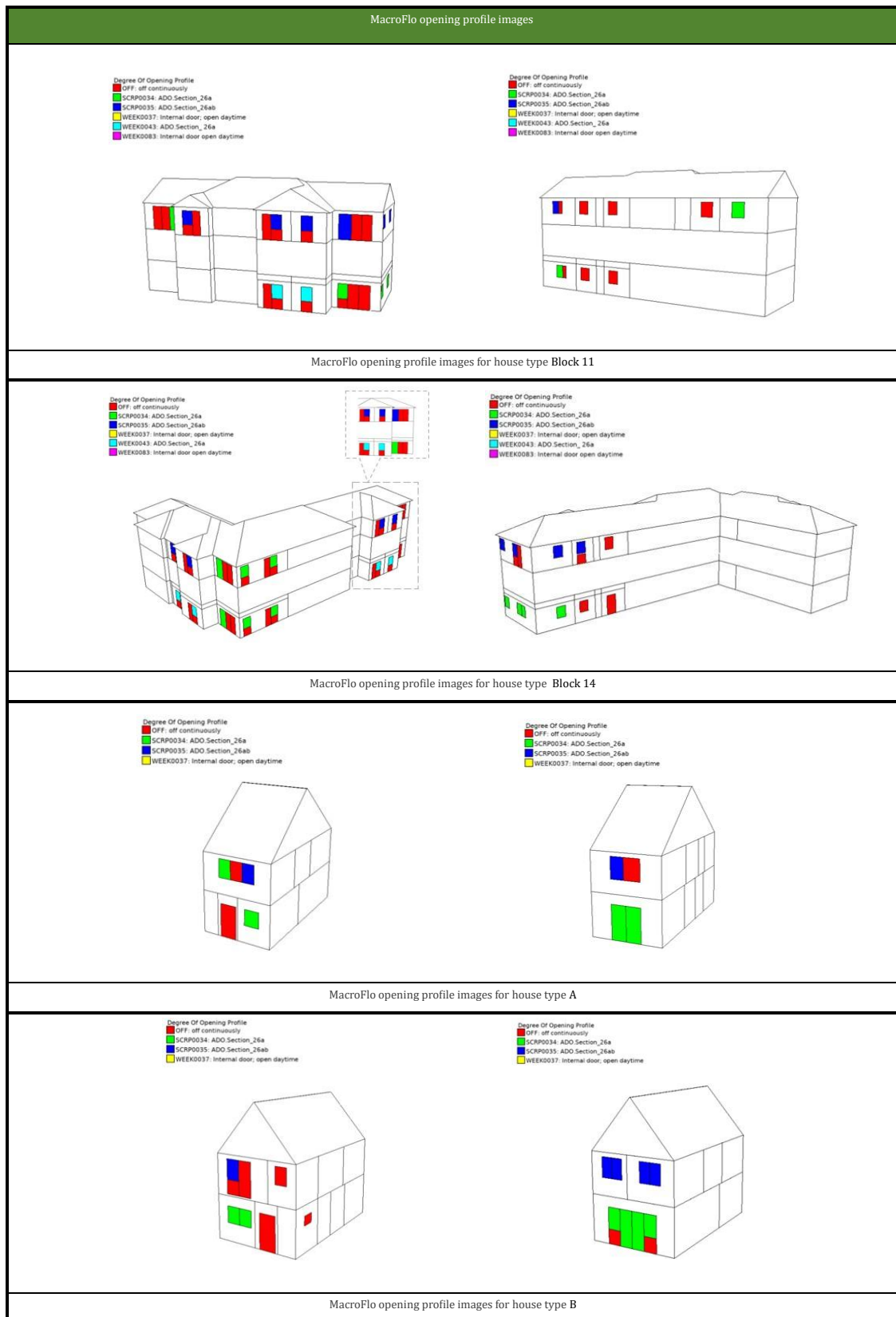
Room name	No. hours > 26°C 22:00-24:00	No. hours > 26°C 00:00-07:00	Total hours > 26°C	Criterion (b) check
HT U GF Living	N/A	N/A	N/A	N/A
HT F GF Living Dining	N/A	N/A	N/A	N/A
HT F GF Kitchen	N/A	N/A	N/A	N/A
HT Q GF Living	N/A	N/A	N/A	N/A
HT Q GF Kitchen	N/A	N/A	N/A	N/A
HT H GF Living Dining	N/A	N/A	N/A	N/A
HT H GF Kitchen	N/A	N/A	N/A	N/A
HT P GF Kitchen	N/A	N/A	N/A	N/A
HT P GF Living	N/A	N/A	N/A	N/A
HT T GF Kitchen	N/A	N/A	N/A	N/A
HT T GF Living	N/A	N/A	N/A	N/A
HT K GF Living Dining	N/A	N/A	N/A	N/A
HT K GF Kitchen	N/A	N/A	N/A	N/A
HT L GF Kitchen	N/A	N/A	N/A	N/A
HT S GF Kitchen	N/A	N/A	N/A	N/A
HT J GF Kitchen	N/A	N/A	N/A	N/A
HT J GF Living Dining	N/A	N/A	N/A	N/A
HT R GF Kitchen	N/A	N/A	N/A	N/A
HT B GF Kitchen	N/A	N/A	N/A	N/A
HT D GF Kitchen	N/A	N/A	N/A	N/A
HT D GF Living Dining	N/A	N/A	N/A	N/A
HT G GF Kitchen	N/A	N/A	N/A	N/A
HT A GF Kitchen	N/A	N/A	N/A	N/A
HT A GF Living Dining	N/A	N/A	N/A	N/A
HT M GF Living	N/A	N/A	N/A	N/A
HT M GF Kitchen Dining	N/A	N/A	N/A	N/A
HT U GF Kitchen	N/A	N/A	N/A	N/A
Block 11 GF FT 16 Kitchen Living	N/A	N/A	N/A	N/A

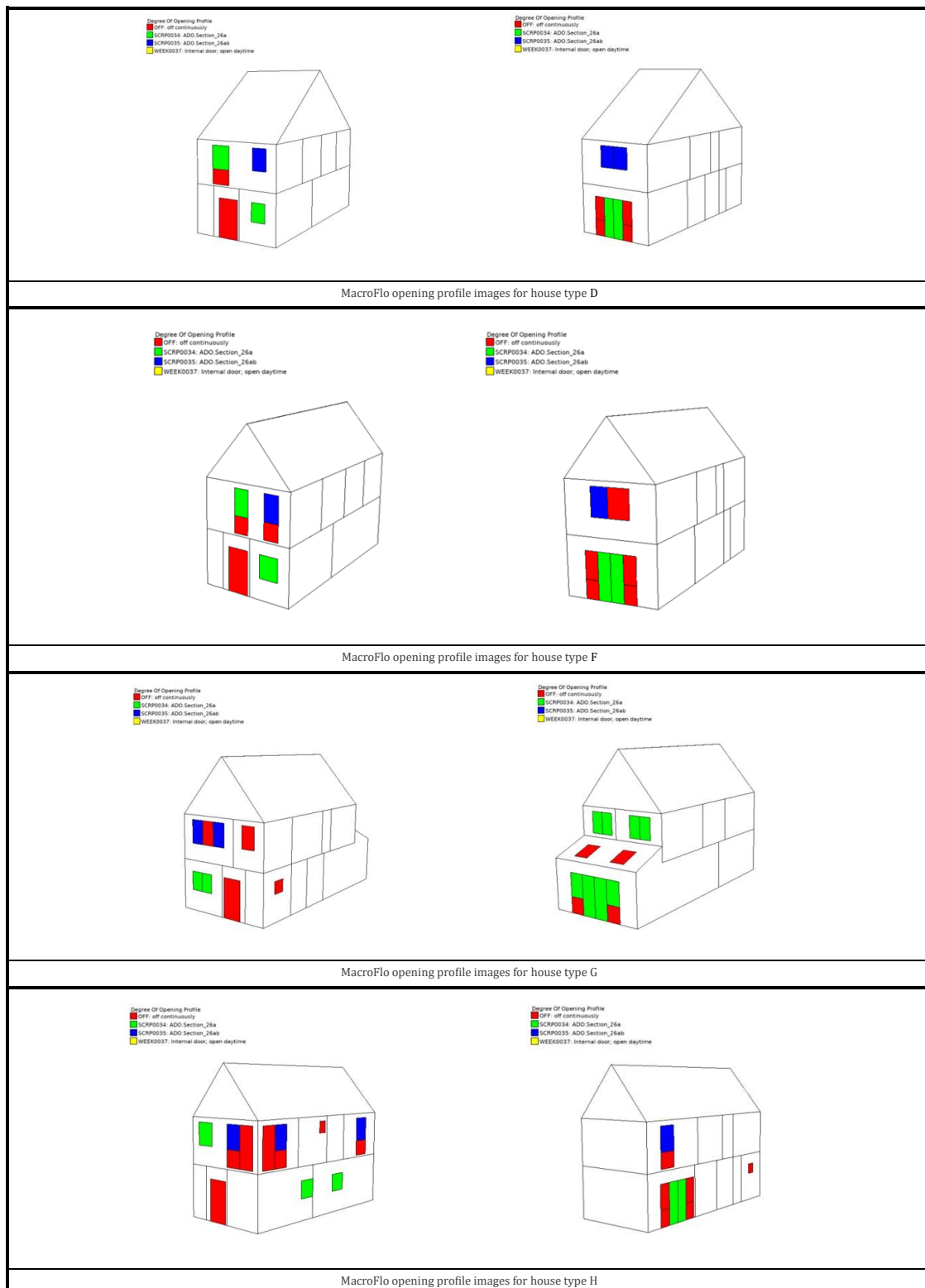
Room name	No. hours > 26°C 22:00-24:00	No. hours > 26°C 00:00-07:00	Total hours > 26°C	Criterion (b) check
Block 11 GF FT 16 Bedroom 1	12	12	24	Pass
Block 11 GF FT 16 Bedroom 2	12	13	25	Pass
Block 14 GF FT 17 Kitchen Living	N/A	N/A	N/A	N/A
Block 14 GF FT 17 Bedroom 2	12	16	28	Pass
Block 14 GF FT 17 Bedroom 1	12	15	27	Pass
Block 14 GF FT 28 Kitchen Living	N/A	N/A	N/A	N/A
Block 14 GF FT 28 Bedroom 1	12	17	29	Pass
Block 14 GF FT 28 Bedroom 2	11	16	27	Pass
Block 14 SF FT 17 Kitchen Living	N/A	N/A	N/A	N/A
Block 14 SF FT 17 Bedroom 2	12	3	15	Pass
Block 14 SF FT 17 Bedroom 1	12	3	15	Pass
Block 14 SF FT 28 Kitchen Living	N/A	N/A	N/A	N/A
Block 14 SF FT 28 Bedroom 1	11	3	14	Pass
Block 14 SF FT 28 Bedroom 2	10	2	12	Pass
Block 11 SF FT 16 Kitchen Living	N/A	N/A	N/A	N/A
Block 11 SF FT 16 Bedroom 1	13	4	17	Pass
Block 11 SF FT 16 Bedroom 2	12	3	15	Pass
HT F FF Bedroom 1	9	3	12	Pass
HT F FF Bedroom 2	9	4	13	Pass
HT Q FF Bedroom 3	9	1	10	Pass
HT Q FF Bedroom 1	4	0	4	Pass
HT Q FF Bedroom 2	6	0	6	Pass
HT H FF Bedroom 2	5	0	5	Pass
HT H FF Bedroom 1	5	0	5	Pass
HT P FF Bedroom 2	7	1	8	Pass
HT P FF Bedroom 1	7	1	8	Pass
HT P FF Bedroom 3	6	1	7	Pass
HT T FF Bedroom 2	5	1	6	Pass
HT T FF Bedroom 4	4	0	4	Pass
HT T FF Bedroom 1	3	0	3	Pass
HT T FF Bedroom 3	4	1	5	Pass

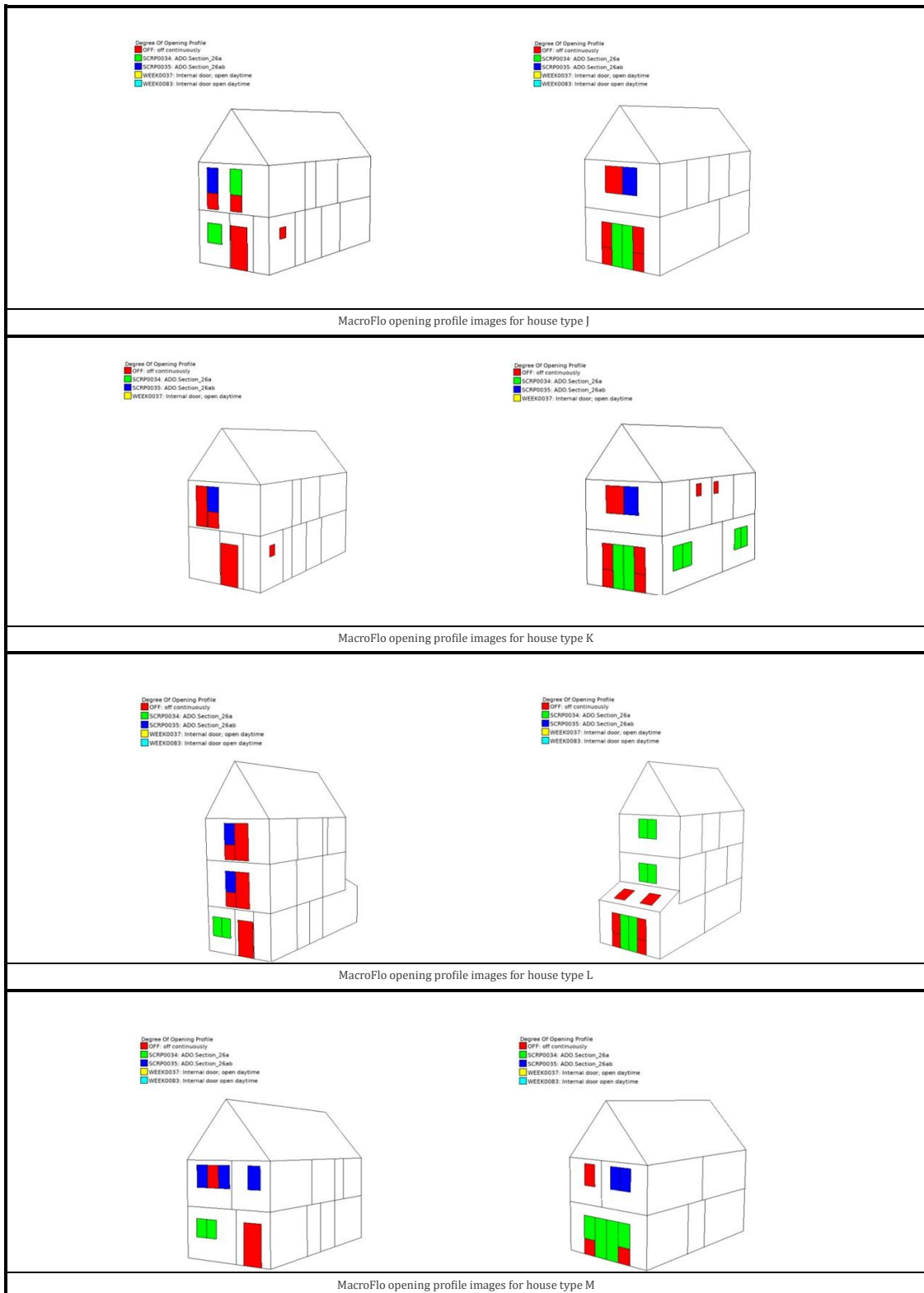
Room name	No. hours > 26°C 22:00-24:00	No. hours > 26°C 00:00-07:00	Total hours > 26°C	Criterion (b) check
HT K FF Bedroom 2	8	3	11	Pass
HT K FF Bedroom 1	10	4	14	Pass
HT N FF Bedroom 3	7	1	8	Pass
HT N FF Bedroom 2	4	0	4	Pass
HT N FF Bedroom 1	5	1	6	Pass
HT L FF Bedroom 3	10	4	14	Pass
HT L FF Bedroom 2	11	17	28	Pass
HT S FF Bedroom 4	9	20	29	Pass
HT S FF Bedroom 2	10	19	29	Pass
HT J FF Bedroom 2	8	3	11	Pass
HT J FF Bedroom 1	7	3	10	Pass
HT R FF Bedroom 4	9	20	29	Pass
HT R FF Bedroom 2	9	18	27	Pass
HT B FF Bedroom 2	6	1	7	Pass
HT B FF Bedroom 3	6	1	7	Pass
HT B FF Bedroom 1	8	2	10	Pass
HT D FF Bedroom 2	6	3	9	Pass
HT D FF Bedroom 1	4	7	11	Pass
HT G FF Bedroom 2	10	16	26	Pass
HT G FF Bedroom 3	10	15	25	Pass
HT G FF Bedroom 1	4	7	11	Pass
HT A FF Bedroom 1	10	2	12	Pass
HT A FF Bedroom 2	7	3	10	Pass
HT M FF Bedroom 1	7	1	8	Pass
HT M FF Bedroom 2	4	1	5	Pass
HT M FF Bedroom 3	9	1	10	Pass
HT U FF Bedroom 3	8	1	9	Pass
HT U FF Bedroom 1	10	4	14	Pass
HT U FF Bedroom 2	4	1	5	Pass
HT U FF Bedroom 4	6	0	6	Pass
HT L SF Study	N/A	N/A	N/A	N/A

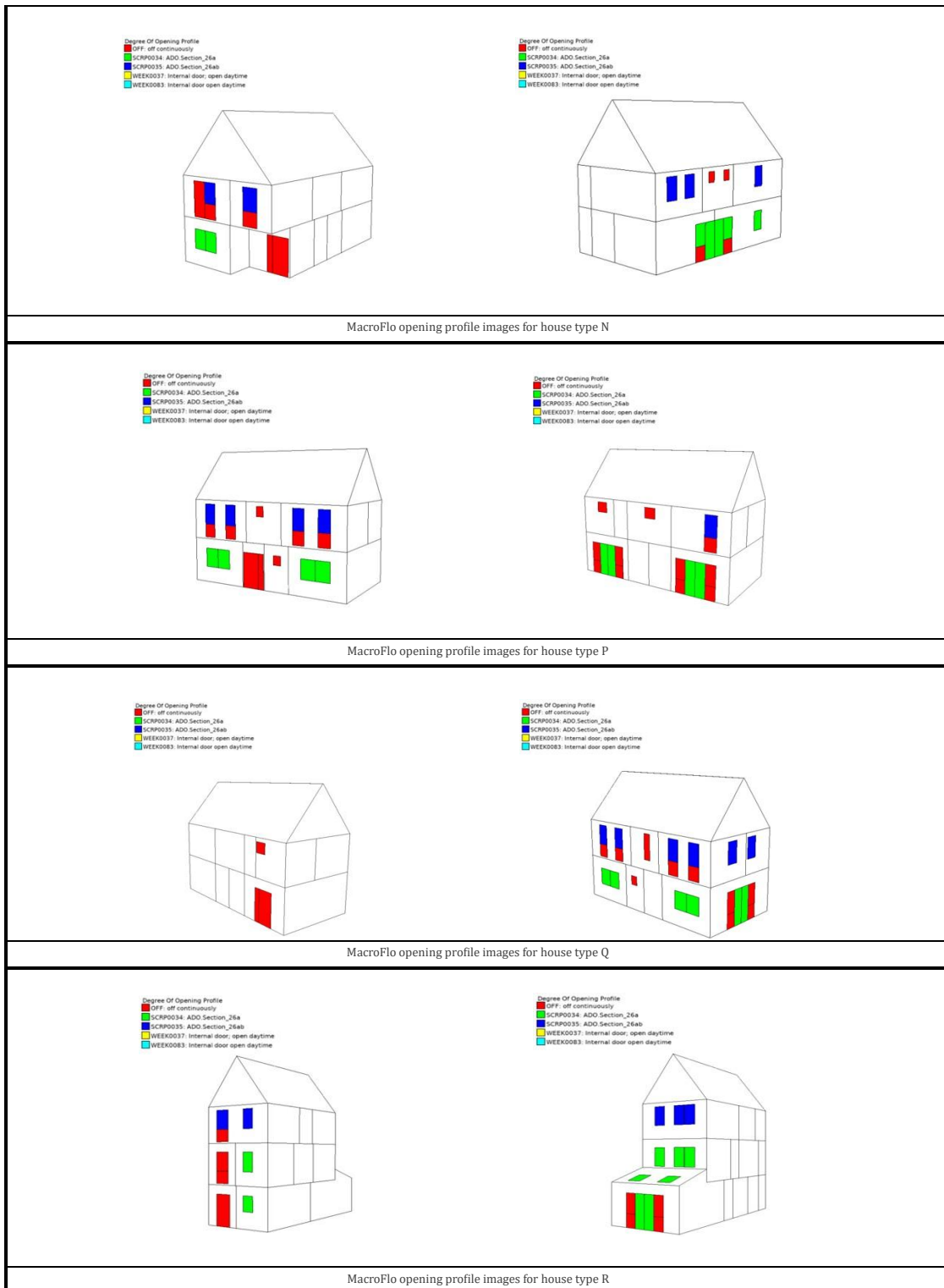
Room name	No. hours > 26°C 22:00-24:00	No. hours > 26°C 00:00-07:00	Total hours > 26°C	Criterion (b) check
HT L SF Bedroom 1	11	6	17	Pass
HT S SF Bedroom 1	9	0	9	Pass
HT S SF Bedroom 3	5	1	6	Pass
HT R SF Bedroom 3	6	1	7	Pass
HT R SF Bedroom 1	4	0	4	Pass
Block 11 SF FT 6 Kitchen Living	N/A	N/A	N/A	N/A
Block 11 SF FT 6 Bedroom 1	12	5	17	Pass
HT N GF Living	N/A	N/A	N/A	N/A
HT N GF Kitchen Dining	N/A	N/A	N/A	N/A
HT L GF Living Dining	N/A	N/A	N/A	N/A
HT S GF Living Dining	N/A	N/A	N/A	N/A
HT R GF Living Dining	N/A	N/A	N/A	N/A
HT G GF Living Dining	N/A	N/A	N/A	N/A
HT B GF Living Dining	N/A	N/A	N/A	N/A

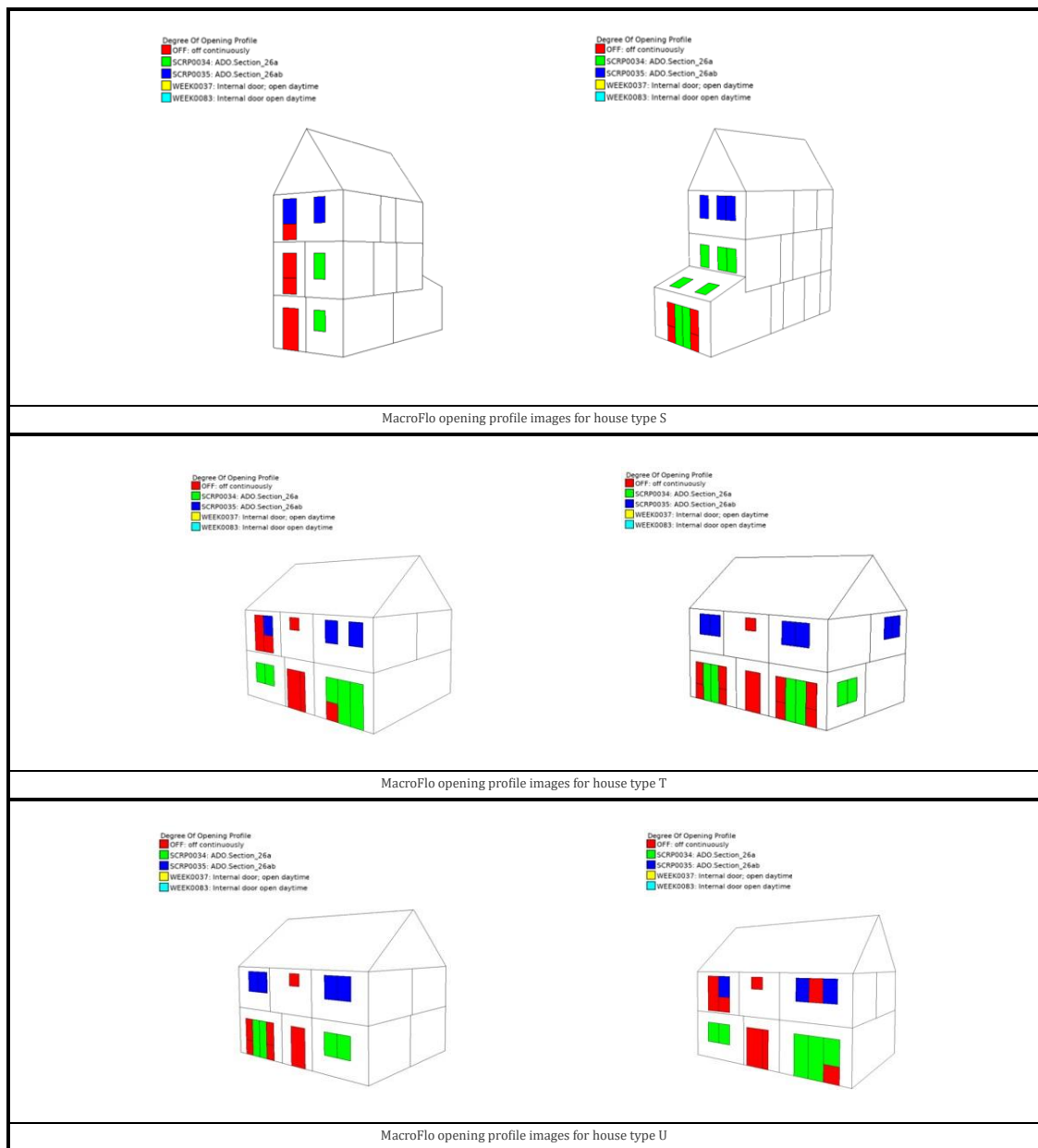
APPENDIX D - Model Images



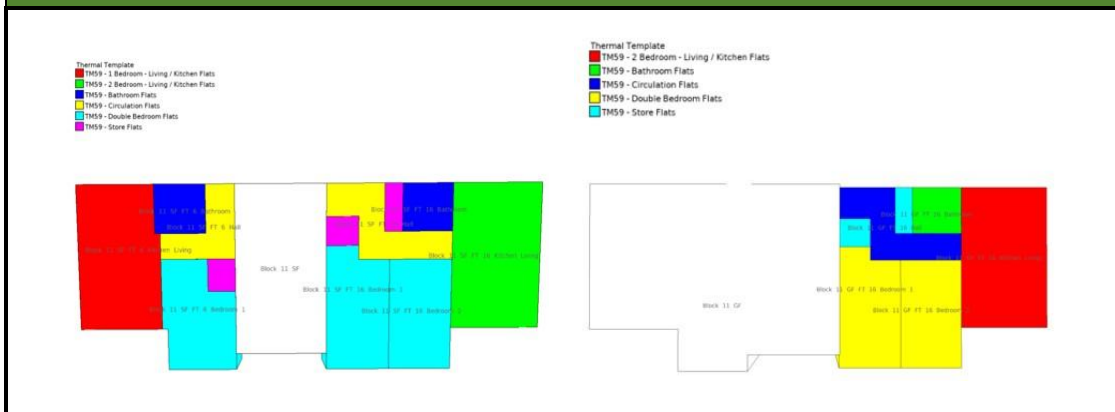




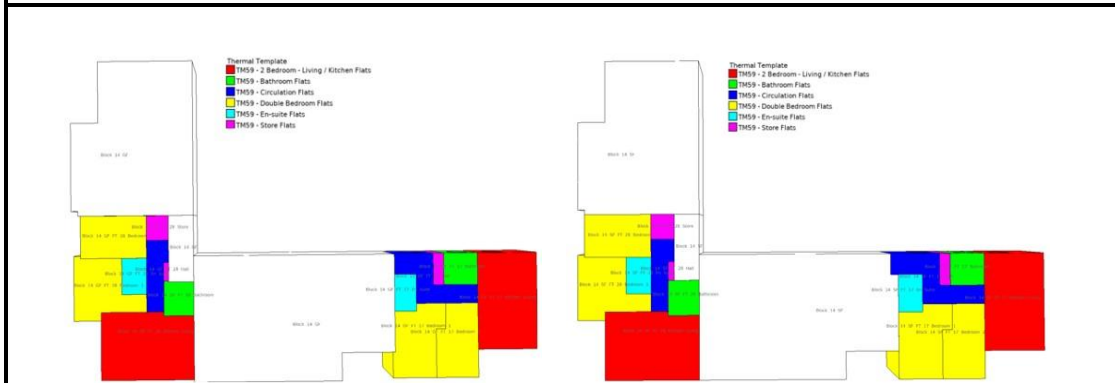




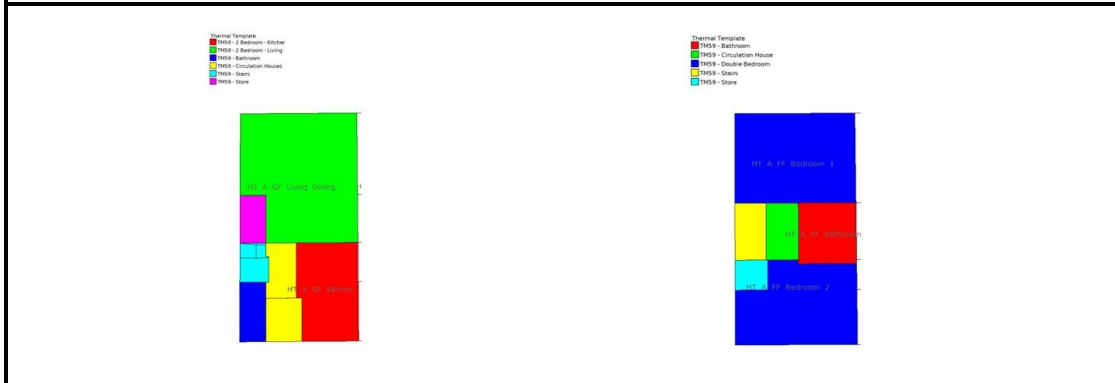
CIBSE TM59 thermal template images



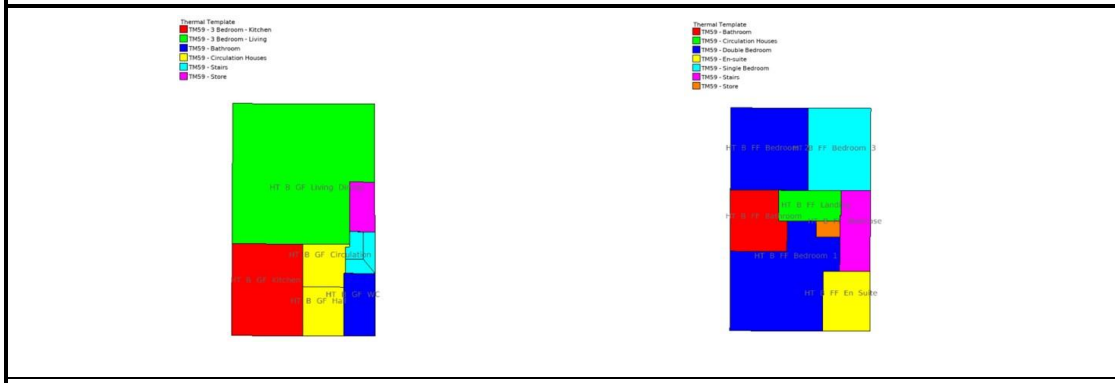
CIBSE TM59 thermal templates for house type Block 11



CIBSE TM59 thermal templates for house type Block 14



CIBSE TM59 thermal templates for house type A



CIBSE TM59 thermal templates for house type B

