

Room Material

Walls

Room Name	External Wall	Internal Wall
Study	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)
Utility	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)
W/C	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)
Kitchen/Dining	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)
Hall	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)
Bedroom 1	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)
Bedroom 2	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)
Bed w/ensuite	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)
Ensuite	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)
Bathroom	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)
Landing	Wall (0.61 W)	Building Regs 2022 Limit (0.26 W)

Windows & Doors

Room Name	Window	External Door	Internal Door
Study	Window (1.40 W)		
Utility	Window (1.40 W)		
W/C	Window (1.40 W)		
Kitchen/Dining	Window (1.40 W)	Door (3.00 W)	
Hall	Window (1.40 W)	Door (3.00 W)	

Bedroom 1	Window (1.40 W)		
Bedroom 2	Window (1.40 W)		
Bed w/ensuite	Window (1.40 W)		
Ensuite	Window (1.40 W)		
Bathroom	Window (1.40 W)		
Landing	Window (1.40 W)		

Floor & Ceiling/Roof

Room Name	Floor	Ceiling/Roof
Study	Floor (1.20 W)	Roof (0.13 W)
Utility	Floor (1.20 W)	Roof (0.13 W)
W/C	Floor (1.20 W)	Roof (0.13 W)
Kitchen/Dining	Floor (1.20 W)	Roof (0.13 W)
Hall	Floor (1.20 W)	Roof (0.13 W)
Bedroom 1	Building Regs 2022 Limit (0.18 W)	Roof (0.13 W)
Bedroom 2	Building Regs 2022 Limit (0.18 W)	Roof (0.13 W)
Bed w/ensuite	Building Regs 2022 Limit (0.18 W)	Roof (0.13 W)
Ensuite	Building Regs 2022 Limit (0.18 W)	Roof (0.13 W)
Bathroom	Building Regs 2022 Limit (0.18 W)	Roof (0.13 W)
Landing	Building Regs 2022 Limit (0.18 W)	Roof (0.13 W)

Room-by-Room Heat Loss Calculations

Worcester Bosch

Cotswold Way, Warndon, Worcester, WR4 9SW

01905751464

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Date of Calculation: 24 Apr 2026

Site Address:

7543.3.2 - Plot 46

Lodge Rd, Caerleon, Newport NP18, UK

Heat Loss Per Area: ≥ 75 W/m² < 75 W/m² < 35 W/m²

Name	Design Temp	Air Changes / Hour	Thermal Bridging	Area	Volume	Fabric Heat Loss	Ventilation Heat Loss	Spare Capacity Heat Loss	Total Heat Loss	W/m²	Annual Energy
Study	21.0 °C	1.50	0.05	6.80 m²	20.41 m³	399.56 W	250.48 W	67.00 W	737.02 W	108.34 W/m² 	1610.80 kWh
Utility	18.0 °C	2.00	0.05	4.96 m²	14.87 m³	257.45 W	213.44 W	48.38 W	532.14 W	107.35 W/m² 	1163.03 kWh
W/C	18.0 °C	1.50	0.05	4.90 m²	14.69 m³	280.38 W	158.14 W	45.25 W	497.80 W	101.65 W/m² 	1087.97 kWh
Kitchen/ Dining	21.0 °C	1.50	0.05	36.07 m²	108.22 m³	1644.77 W	1328.25 W	305.53 W	3360.79 W	93.16 W/m² 	7345.25 kWh
Hall	18.0 °C	1.00	0.05	8.77 m²	26.32 m³	455.07 W	188.89 W	66.67 W	733.38 W	83.59 W/m² 	1602.86 kWh
Bedroom 1	18.0 °C	1.00	0.05	15.23 m²	30.47 m³	307.57 W	218.64 W	54.16 W	595.74 W	39.11 W/m² 	1302.03 kWh
Bedroom 2	18.0 °C	1.00	0.05	11.81 m²	23.61 m³	263.07 W	169.45 W	44.57 W	490.25 W	41.52 W/m² 	1071.47 kWh
Bed w/ensuite	21.0 °C	1.50	0.05	14.77 m²	29.55 m³	238.01 W	362.64 W	61.26 W	673.81 W	45.61 W/m² 	1472.66 kWh

Ensuite	22.0 °C	1.50	0.05	6.74 m ²	13.48 m ³	228.19 W	172.26 W	41.19 W	453.05 W	67.20 W/m ²	990.17 kWh
Bathroom	22.0 °C	1.50	0.05	5.00 m ²	9.99 m ³	204.70 W	127.67 W	34.26 W	376.86 W	75.43 W/m ²	823.65 kWh
Landing	18.0 °C	1.00	0.05	7.67 m ²	15.34 m ³	145.52 W	110.10 W	26.29 W	289.18 W	37.70 W/m ²	632.02 kWh
Total/Avg.	NA	NA	NA	122.73 m²	306.96 m³	4424.28 W	3299.97 W	794.55 W	8740.01 W	71.21 W/m²	19101.93 kWh

Material Heat Loss

Room Name	External Wall	Internal Wall	Party Wall	Window	External Door	Internal Door	Floor	Ceiling/ Roof
Study	206.75 W	0.00 W	0.00 W	61.49 W	0.00 W	0.00 W	130.61 W	0.71 W
Utility	170.53 W	0.00 W	0.00 W	9.59 W	0.00 W	0.00 W	77.33 W	0.00 W
W/C	149.99 W	0.00 W	0.00 W	53.93 W	0.00 W	0.00 W	76.40 W	0.06 W
Kitchen/Dining	501.19 W	29.96 W	0.00 W	259.62 W	146.40 W	0.00 W	692.63 W	14.98 W
Hall	134.27 W	0.00 W	0.00 W	53.93 W	128.40 W	0.00 W	136.87 W	1.59 W
Bedroom 1	157.19 W	0.00 W	0.00 W	107.86 W	0.00 W	0.00 W	0.14 W	42.38 W
Bedroom 2	171.95 W	0.00 W	0.00 W	53.93 W	0.00 W	0.00 W	4.35 W	32.85 W
Bed w/ensuite	53.94 W	13.96 W	0.00 W	122.98 W	0.00 W	0.00 W	0.27 W	46.86 W
Ensuite	133.18 W	6.43 W	0.00 W	64.01 W	0.00 W	0.00 W	2.31 W	22.26 W
Bathroom	110.83 W	9.30 W	0.00 W	64.01 W	0.00 W	0.00 W	4.07 W	16.50 W
Landing	69.37 W	0.00 W	0.00 W	53.93 W	0.00 W	0.00 W	0.88 W	21.34 W
Total	1859.20 W	59.64 W	0.00 W	905.25 W	274.80 W	0.00 W	1125.86 W	199.53 W

7543.3.2 - Plot 46
Lodge Rd, Caerleon, Newport NP18, UK

Worcester Bosch

Heat Emitter Summary

Worcester Bosch

Cotswold Way, Warndon, Worcester, WR4 9SW

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imira.mutkova@uk.bosch.com

Site Address:

7543.3.2 - Plot 46

Lodge Rd, Caerleon, Newport NP18, UK

Date of Calculation: 24 Apr 2026

Demand Met: < 50% < 100% ≥ 100%

Room Summary:

Room Name	Design Temperature	Heat Loss	Heat Supplied
Study	21.0 °C	737 W	756 W (102.57%) 
Utility	18.0 °C	532 W	717 W (134.76%) 
W/C	18.0 °C	498 W	469 W (94.16%) 
Kitchen/Dining	21.0 °C	3361 W	3674 W (109.31%) 
Hall	18.0 °C	733 W	779 W (106.22%) 
Bedroom 1	18.0 °C	596 W	717 W (120.37%) 
Bedroom 2	18.0 °C	490 W	527 W (107.53%) 
Bed w/ensuite	21.0 °C	674 W	756 W (112.19%) 
Ensuite	22.0 °C	453 W	250 W (55.12%) 
Bathroom	22.0 °C	377 W	226 W (59.88%) 
Landing	18.0 °C	289 W	301 W (104.17%) 

Room Summary by Emitter Type:

Room Name	Emitter Type	Design Temperature	Heat Loss	Heat Supplied
Study	RAD	21.0 °C	756 W	756 W (102.57%) 
Utility	RAD	18.0 °C	717 W	717 W (134.76%) 
W/C	RAD	18.0 °C	469 W	469 W (94.16%) 
Kitchen/Dining	RAD	21.0 °C	3674 W	3674 W (109.31%) 
Hall	RAD	18.0 °C	779 W	779 W (106.22%) 
Bedroom 1	RAD	18.0 °C	717 W	717 W (120.37%) 
Bedroom 2	RAD	18.0 °C	527 W	527 W (107.53%) 
Bed w/ensuite	RAD	21.0 °C	756 W	756 W (112.19%) 
Ensuite	RAD	22.0 °C	250 W	250 W (55.12%) 
Bathroom	RAD	22.0 °C	226 W	226 W (59.88%) 
Landing	RAD	18.0 °C	301 W	301 W (104.17%) 

Radiators:

Room Name	Design Temp	Heat Loss	Mean Water Temp	Delta T	Emitter Name	Emitter Height	Emitter Width	Emitter Type	Output @ 50°C Delta T	Output @ System Delta T	Flow Rate	Demand Met
Study	21.0 °C	737 W	50.0 °C	10.0 °C	Towelrad Windsor 2 Column (White)	1800 mm	582 mm	RAD	444.0 W	756 W	0.02 L/s	102.57% 
Utility	18.0 °C	532 W	50.0 °C	10.0 °C	Towelrad Windsor 2 Column (White)	1800 mm	490 mm	RAD	444.0 W	717 W	0.02 L/s	134.76% 
W/C	18.0 °C	498 W	50.0 °C	10.0 °C	Towelrad Pisa Pisa Chrome Straight	1800 mm	750 mm	RAD	824.0 W	469 W	0.01 L/s	94.16% 
Kitchen/Dining	21.0 °C	3361 W	50.0 °C	10.0 °C	Towelrad Windsor 4 Column (White)	1800 mm	490 mm	RAD	444.0 W	1148 W	0.03 L/s	34.16% 
Kitchen/Dining	21.0 °C	3361 W	50.0 °C	10.0 °C	Towelrad Windsor 4 Column (White)	1800 mm	490 mm	RAD	444.0 W	1148 W	0.03 L/s	34.16% 
Kitchen/Dining	21.0 °C	3361 W	50.0 °C	10.0 °C	Towelrad Windsor 4 Column (White)	1800 mm	582 mm	RAD	444.0 W	1378 W	0.04 L/s	40.99% 
Hall	18.0 °C	733 W	50.0 °C	10.0 °C	Towelrad Windsor 3 Column (White)	1800 mm	398 mm	RAD	444.0 W	779 W	0.02 L/s	106.22% 
Bedroom 1	18.0 °C	596 W	50.0 °C	10.0 °C	Towelrad Windsor 2 Column (White)	1800 mm	490 mm	RAD	444.0 W	717 W	0.02 L/s	120.37% 

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Lodge Rd, Caerleon, Newport NP18, UK

Worcester Bosch

Bedroom 2	18.0 °C	490 W	50.0 °C	10.0 °C	Towelrad Windsor 2 Column (White)	600 mm	996 mm	RAD	444.0 W	527 W	0.01 L/s	107.53% 
Bed w/ensuite	21.0 °C	674 W	50.0 °C	10.0 °C	Towelrad Windsor 2 Column (White)	1800 mm	582 mm	RAD	444.0 W	756 W	0.02 L/s	112.19% 
Ensuite	22.0 °C	453 W	50.0 °C	10.0 °C	Towelrad Pisa Pisa Chrome Straight	1800 mm	450 mm	RAD	522.0 W	250 W	0.01 L/s	55.12% 
Bathroom	22.0 °C	377 W	50.0 °C	10.0 °C	Towelrad Pisa Pisa Chrome Straight	1800 mm	400 mm	RAD	472.0 W	226 W	0.01 L/s	59.88% 
Landing	18.0 °C	289 W	50.0 °C	10.0 °C	Towelrad Windsor 2 Column (White)	600 mm	582 mm	RAD	444.0 W	301 W	0.01 L/s	104.17% 