

# Liana Lane

ARBOR GREEN



## Thermal Performance Report

A lot of townhouses overheat in summer! Which is really uncomfortable.

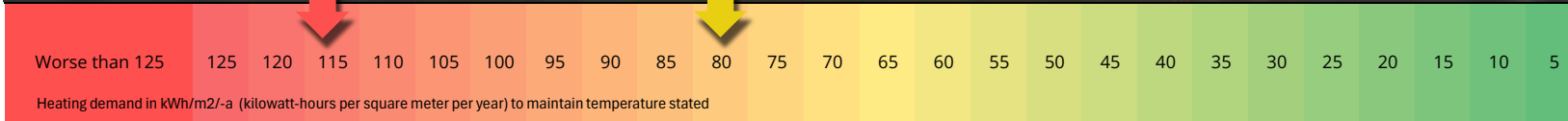
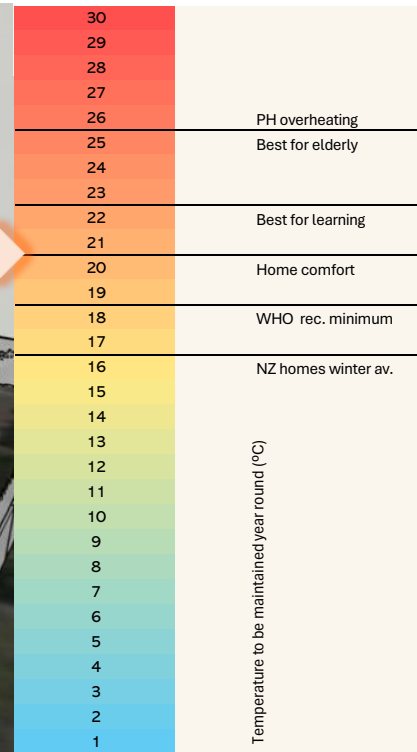
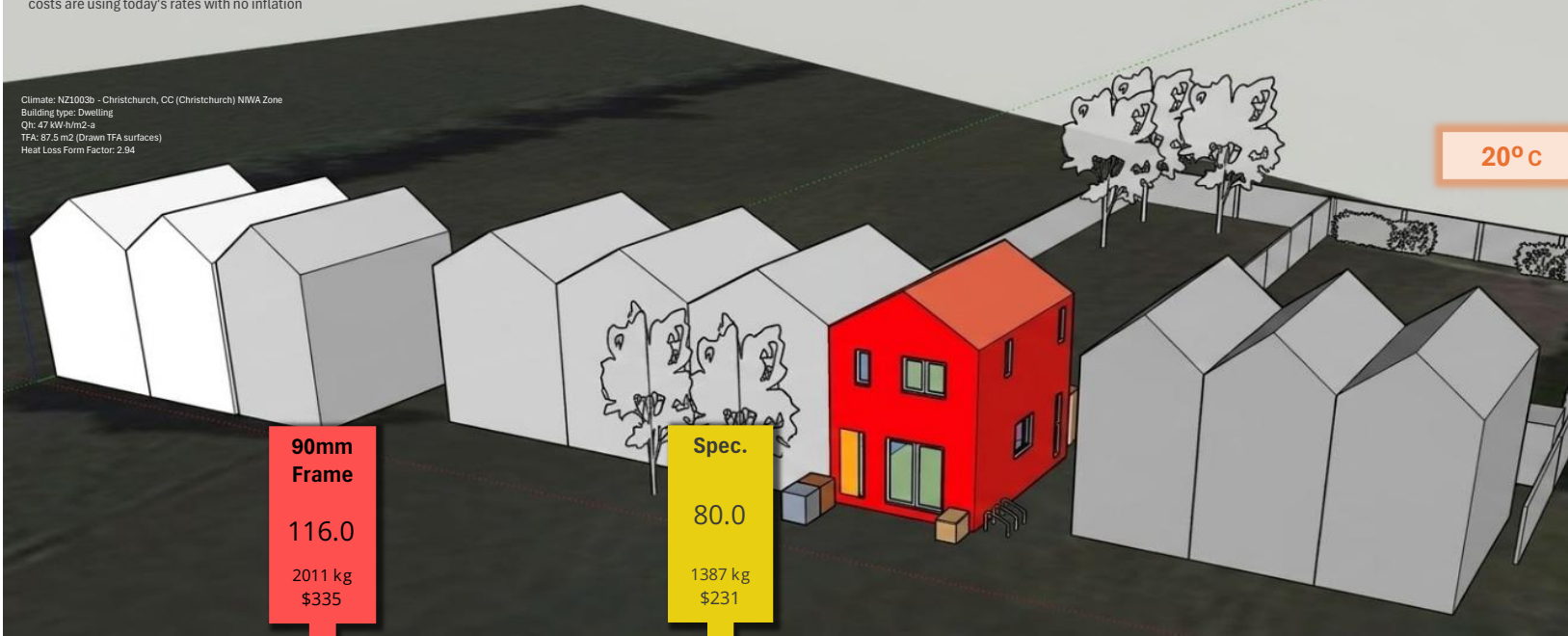
This modelling estimates what year round comfort will be like and shows evidence that our design will stay within the comfortable temperature ranges without additional heating and cooling.

(Some townhouse owners pay for an extra heatpump upstairs because the temperature fluctuates so much, and that equals poor building design)

# Thermal Performance Options Report - 3 Bedroom Residences

Whole of life carbon totals calculated using 100% occupancy at today's retail power cost of \$0.34/kWh and power cost inflation at 0% and a national power to carbon rate of 0.17kg/kWh. Monthly power costs are using today's rates with no inflation

Climate: NZ1003b - Christchurch, CC (Christchurch) NWA Zone  
 Building type: Dwelling  
 Qn: 47 kWh/m2-a  
 TFA: 87.5 m2 (Drawn TFA surfaces)  
 Heat Loss Form Factor: 2.94



Address Rolleston, Christchurch  
 Client Home Construction  
 Date Prepared 6-Mar-26

90mm Frame	116.0
H&C power \$/mth	\$335
GWP in CO <sup>2</sup> equiv. /yr	2011 kg
Air changes /hr (50pa)	5.0
Floor	Rib Raft 300/100
Walls	90mm Timber/Batts
Windows	APL TB Low E
Roof	240mm Rafter/Batts
Extract Only	
Likelihood of mould	MODERATE
Heating Load (W/m <sup>2</sup> )	54
Heating Capacity (kW)	5.5

Specified	80.0
H&C power \$/mth	\$231
GWP in CO <sup>2</sup> equiv. /yr	1387 kg
Air changes /hr (50pa)	1.0
Floor	SlabX Koolfoam Solid Eco pod
Walls	Formance 115mm EPS
Windows	Stark Ambience uPVC
Roof	Formance 215mm EPS
MHRV	moistureMASTER HX1
Likelihood of mould	LOW
Heating Load (W/m <sup>2</sup> )	37
Heating Capacity (kW)	3.8

Power Cost	\$ 0.34	(\$/kWh)
Occupancy	100%	(%)
Treated Floor Area	102	(m2)
NZ Power to Carbon	0.17	(kg carbon /kWh)

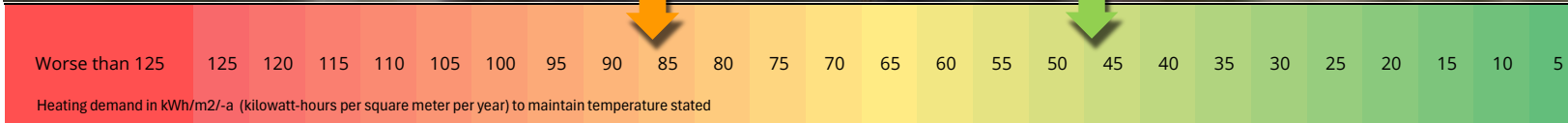
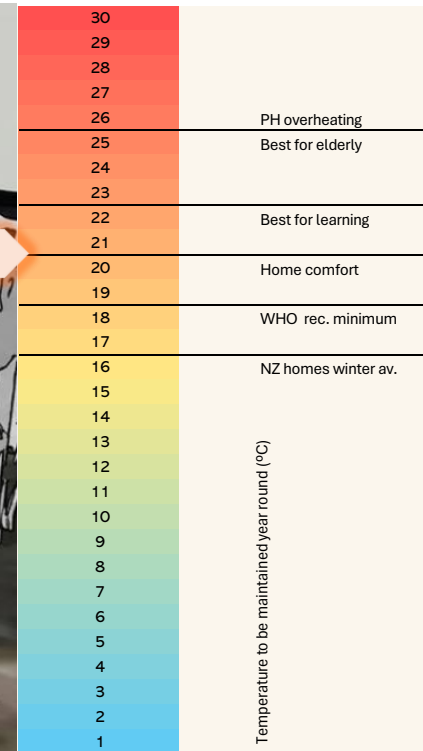
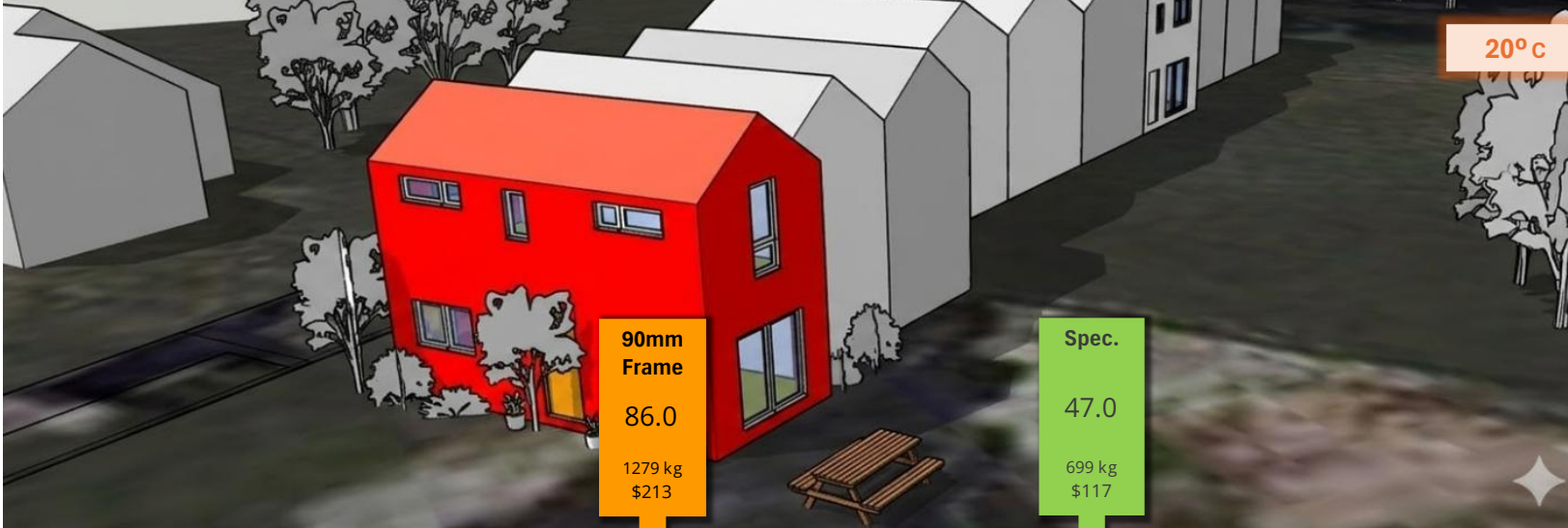


Reports generated using Design PH and PHPP software tools

# Thermal Performance Options Report - 2 Bedroom Residences

Whole of life carbon totals calculated using 100% occupancy at today's retail power cost of \$0.34/kWh and power cost inflation at 0% and a national power to carbon rate of 0.17kg/kWh. Monthly power costs are using today's rates with no inflation

Climate: NZ1003b - Christchurch, CC (Christchurch) NIWA Zone  
 Building type: Dwelling  
 Qh: 47 kW-h/m2-a  
 TFA: 87.5 m2 (Drawn TFA surfaces)  
 Heat Loss Form Factor: 2.94



Reports generated using Design PH and PHPP software tools

Address: Rolleston, Christchurch  
 Client: Home Construction  
 Date Prepared: 6-Mar-26

90mm Frame	86.0
H&C power \$/mth	\$213
GWP in CO <sup>2</sup> equiv. /yr	1279 kg
Air changes /hr (50pa)	5.0
Floor	Rib Raft 300/100
Walls	90mm Timber/Batts
Windows	APL TB Low E
Roof	240mm Rafter/Batts
Extraction only	
Likelihood of mould	MODERATE
Heating Load (W/m <sup>2</sup> )	39
Heating Capacity (kW)	3.4

Specified	47.0
H&C power \$/mth	\$117
GWP in CO <sup>2</sup> equiv. /yr	699 kg
Air changes /hr (50pa)	1.0
Floor	SlabX Koolfoam Solid Eco pod
Walls	Formance 115mm EPS
Windows	Stark Ambience uPVC
Roof	Formance 215mm EPS
MHRV	moistureMASTER HX1
Likelihood of mould	LOW
Heating Load (W/m <sup>2</sup> )	22
Heating Capacity (kW)	1.9

Parameters		
Power Cost	\$ 0.34	(\$/kWh)
Occupancy	100%	(%)
Treated Floor Area	87.5	(m2)
NZ Power to Carbon	0.17	(kg carbon /kWh)

