Design Navigator H1 Compliance Report

Project Summary

H1 Report created by:	Homeworx Design and Build Limited
Project Name:	Ashworth Home
Client:	Leith and Tracy Ashworth
Lot No:	Lot 1 DP28080
Comment:	619 Kereru Road Maraekakaho Hastings
Project Id:	108372
Report Date:	21/01/2018

Compliance Result

This report shows compliance of the design with Clause H1 Fourth edition Amendment 3 from January 2017 and the R-value targets of Clause E3 Second edition Amendment 6 from January 2017.

This building complies with H1 via the following methods:

- the Calculation Method in NZS4218:2009

H1 Compliance Details

NZS4218:2009 Calculation Method Compliance

The use of the Calculation Method is permitted .

In order to comply the Actual Heat Loss must be the same or smaller than the Reference Heat Loss AND all component R-values must be the same or larger than 50% of the R-values in the '50% Rule' table below. This design **complies** with the NZS4218:2009 Calculation Method.

HeatLoss:

Reference building	Proposed building
587	555

Minimum R-values ("50% rule"):

	Permitted Minimum	Proposed Minimum	
Floor:	0.65	1.97	✓
Non-solid Walls:	0.95	2.01	✓
Roof:	1.45	3.1	✓

The Reference building has the following areas and R-values.

					Non-solid	Solid Timber	Other Solid
					100.0	0.0%	0.0%
Floor:	Area:	201	m²	R-values:	1.3	1.3	1.5
Walls excl. glazing:	Area:	126.1	m²	R-values:	1.9	1.2	1
Glazing (up to 30%):	Area:	63.2	m²	R-values:	0.26	0.26	0.26
Glazing (surplus of 30%):	Area:	21.4	m²	R-values:	0.4	0.34	0.31
Roof:	Area:	201	m²	R-values:	2.9	3.5	3.5
Heat Loss:					587	623	630

For mixed constructions the heat loss of the reference building is calculated as the sum of the heat losses for each type of wall construction multiplied by the fraction of the wall area of each type. This approach is based on clause 4.2.6 of NZS4218:2009.
There are no skylights in the reference building. The reference building roof area is the sum of the proposed building roof and skylight areas.

Compliance with Clause E3

This building complies with the R-value targets in NZBC Clause E3 .

Component	Minimum R-value	Project R-value
Framed wall constructions with cavities	1.5	
Single skin masonry wall without a cavity	0.6	
Solid timber wall no less than 60 mm thick	0.6	
Roof or ceilings	1.5	

Design Details

Building Dimensions

Floor Area	201	m²
Gross Wall Area	210.7	m²
Net Wall Area	126.1	m²
Wall (North) Area	36.2	m²
Wall (East, South and West) Area	89.9	m²
Gross Roof Area	201	m²
Net Roof Area	201	m²
Glazing Area	84.6	m²
Window (North) Area	39.4	m²
Window (East, South and West) Area	45.2	m²
Skylight Area	0	m²

Glazing Areas

Total Vertical Glazing Percentage	40.1	%
East, South and West Window Percentage	33.4	%
Total over 30%	yes	
East, South and West over 30%	yes	
Total over 50%	no	
max. Skylight Area for Schedule Method	3.01	m²
Skylights over Schedule Method Limit	no	
Decorative Glazing	0	m²
Decorative Glazing over 3m²	no	

Information required for BPI calculation

Living Floor Area	201	m²	Note: This includes also internal floors.
Average Room Height	2.6	m	
Thermal Mass Level	Heavy weight		Slab floor with substantial floor areas polished or tiled, some heavy mass solar facing walls.

Climate

Location	Hastings
Climate Zone	2

Heat Loss Details

	ID	Orient.	Width	Height	Gross Area	Net Area	R-value*	Heat Loss	Shad. Coeff.**	Solid Wall***
Floors										
Floor 1	Main Floor				201.0	201.0	1.97	102.0		
Walls										
Wall 1	North	N	29.6	2.5	75.6	36.2	2.01	18.0		C
Window 1-1	Windows & Doo		17.9	2.2		39.4	0.26	151.5	0.53	
Wall 2	East	E	14.5	2.5	37.0	21.6	2.01	10.7		C
Window 2-1	Windows and D		7.0	2.2		15.4	0.26	59.2	0.53	
Wall 3	South	S	23.9	2.5	61.1	39.4	2.01	19.6		C
Window 3-1	Windows and D		9.8	2.2		21.6	0.26	83.2	0.53	
Wall 4	West	W	14.5	2.5	37.0	28.8	2.01	14.3		C
Window 4-1	Windows and D		3.7	2.2		8.1	0.26	31.3	0.53	
Roofs										
Roof 1	Whole Roof				201.0	201.0	3.10	64.8		
Total Heat Loss								554.8		

* Any concrete slab-on-ground floor regardless of its dimensions can be assumed to have an R-value of at least R-1.3 (H1/AS1 2.1.5).
** The Shading Coefficient is only required for BPI calculations.
*** C: Cavity Construction (any construction that is not solid), T: Solid Timber, S: Other Solid Construction (Note that the use of solid timber and other solid construction types is discretional, i.e. solid timber walls and other solid walls can be treated as if they are non-solid (NZS4218:2009 section 4.1.3.).)

Floor Construction Details

Name: Floortype 1

2.22 m²°C/W

Type: Floor: Slab Floor with Insulation on Top of Slab

internal surface 0.09

Flooring : none (Example: polished surface of a concrete floor)

R-value: 0.00

Insulation :

Slab Insulation

Slab floor area [m²]:	201		
Perimeter length [m]:	81		
External wall thickness [mm]:	122		
Soil conductivity [W/m °C]	1.2		
Underslab insulation:	Total slab	Insulation :	1.97
Piles Footings:	Number:	Penetration Diameter:	
Slab edge insulation:	none	Insulation :	

Wall Construction Details

Name: Linea

2.01 m²°C/W

Type: Wall: Timber frame (direct fixed cladding)

external surface 0.03

Cladding : Linea weatherboard

R-value: 0.04

Air Barrier : Building paper

R-value: 0.01

Timber Frame & Cavity : 90mm, studs @ 400mm, dwangs @ 800mm

Wall Frame Area: 17.9%

Framing :
R-value: 0.75

Cavity Area: 82.1%

Insulation : 2.6

still Airgap: none

R-value: 0.00

Wall Lining : Gypsum plasterboard 10mm

R-value: 0.04

internal surface 0.09

Name: Brick — 2.08 m²°C/W

Type: Wall: Timber Frame with vented Cavity

external surface 0.03

Cladding : 90mm brick
R-value: 0.08

Air Barrier : Building paper
R-value: 0.01

Timber Frame & Cavity : 90mm, studs @ 600mm, dwangs @ 400mm

Wall Frame Area: 19.6%	*Cavity Area: 80.4%*
15-90mm vented cavity (all R-values on ext. side of cavity will be halved), R: 0.08	15-90mm vented cavity (all R-values on ext. side of cavity will be halved), R: 0.08
Framing : *R-value: 0.75*	Insulation : 2.6
	still Airgap: none *R-value: 0.00*

Wall Lining : Gypsum plasterboard 10mm
R-value: 0.04

internal surface 0.09

Roof Construction Details

Name: Corrugate Roof — 3.10 m²°C/W

Type: Roof: Timber framed Roof, suspended Ceiling

external surface 0.03

Roofing : Corrugate iron with building paper
R-value: 0.01

Insulation :

Timber Frame & Cavity : 90mm rafters or joists @ 480mm, battens covered with insulation

Roof Frame Area: 9.4%	*Cavity Area: 90.6%*
Roof space (still air) 0.11	Roof space (still air) 0.11
Framing : *R-value: 0.75*	Insulation : 3.6

air gap (between 50-200mm) 0.15

Roof Lining : Gypsum plasterboard 10mm
R-value: 0.04

internal surface 0.09

Non-IC-rated recessed downlights

Ceiling Area [m²]: 201 Number of downlights: 52 Clearance from lamp holder side [m]: